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OVERSIGHT HEARING ON THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

HEARING

OF THE

SUBCOMMITTEE ON HEALTH AND SAFETY

OF THE

COMMITTEE ON EDUCATION AND LABOR
HOUSE OF REPRESENTATIVES

NINETY-NINTH CONGRESS

FIRST SESSION

HEARING HELD IN WASHINGTON, DC, JULY 24, 1985

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OVERSIGHT HEARING ON THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

WEDNESDAY, JULY 24, 1985

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON HEALTH AND SAFETY,
COMMITTEE ON EDUCATION AND LABOR,
Washington, DC.

The subcommittee met, pursuant to call, at 9:30 a.m., in room 2261, Rayburn House Office Building, Hon. Joseph M. Gaydos (chairman of the subcommittee) presiding.

Members present: Representatives Gaydos, Hayes and Chandler.

Staff present: For the Subcommittee on Health and Safety: Sy Holzman, deputy staff director, and Lee Bassford, staff assistant. For the Committee on Education and Labor: Mark Powden, administrator and staff director for Labor.

Mr. GAYDOS. The Subcommittee on Health and Safety will come to order.

One of the great tragedies today is that too many men and women are dying from work-related injuries and illnesses despite all of our efforts to reduce and eliminate the causes.

The numbers of occupational deaths and injuries vary according to who does the counting, but annually deaths range between 5,000 and 10,000 and the injuries are counted in the millions.

One of the purposes of creating the National Institute for Occupational Safety and Health in the Occupational Safety and Health Act of 1970—which this committee fabricated and supported and had passed on the House floor—was to create a research arm that could review occupational deaths to determine patterns that could be prevented.

In the course of its operation, NIOSH has made great strides in this direction, and each year summarizes its activities in its annual report. And, as important as that report is, it is sometimes more important for data to be shared on a face-to-face basis so that we can explore more deeply the inferences behind the facts and figures.

That is the purpose of today's hearing. We are here to learn what NIOSH is doing, how it relates to the health and safety of American workers, and what the agency's plans are for their future efforts.

So, with that thought in mind, Dr. Millar, if you would introduce those with you for the record, let's get down to business and get some of your views and also your specific report in the record.

STATEMENT OF J. DONALD MILLAR, M.D., DIRECTOR, NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH, CENTERS FOR DISEASE CONTROL, PUBLIC HEALTH SERVICE, DEPARTMENT OF HEALTH AND HUMAN SERVICES, ACCOMPANIED BY ELLIOTT HARRIS, DEPUTY DIRECTOR; RICHARD A. LEMEN, DIRECTOR, DIVISION OF STANDARDS DEVELOPMENT AND TECHNOLOGY TRANSFER; JAMES MELIUS, DIRECTOR, DIVISION OF SURVEILLANCE, HEALTH EVALUATIONS, AND FIELD STUDIES; AND JOHN MORAN, DIRECTOR, DIVISION OF SAFETY RESEARCH, MORGANTOWN, WV

Dr. MILLAR. Thank you, Mr. Chairman. I very much appreciate your invitation to come here and talk about one of my favorite subjects, NIOSH.

At this point I would like to introduce to you the people that I brought with me. On my immediate left is Dr. Elliott Harris, who is the Deputy Director of NIOSH and, before that, was for a long period a leading scientist operating one of our divisions in NIOSH. On my immediate right is Mr. Richard Lemen, who directs our Division of Standards Development and Technology Transfer. Next to Mr. Lemen is Dr. James Melius, our newly appointed Director of the Division of Surveillance, Hazard Evaluations, and Field Studies.

Mr. Chairman, you have seen my written testimony and, with your permission, I would like to make a few personal comments along the way rather than simply reading the testimony.

Mr. GAYDOS. Without objection, the submitted statement will be made a part of the record in its entirety. Without objection, so ordered.

Dr. MILLAR. Thank you, sir.

Last Monday I quietly observed my fourth anniversary as Director of NIOSH, looking reflectively on the things that have happened over the past 4 years. I have been in the Public Health Service for 24 years now, and these 4 years as Director of NIOSH have been the most challenging and stimulating of my entire career. It hasn't always been pleasant, and it hasn't often been easy, but it has certainly been an intense and stimulating experience.

In thinking about that, I was reminded of an event that happened when I was a very young man. I thought it might be appropriate to share with you as background to some of my comments.

When I made the decision to go into medicine, I wanted to share that decision with the doctor who had taken care of me as a child. I went into his office—he was a salty older man who took his job very seriously—and I said to him, "Dr. Alexander, I want to share with you that I have made the decision to go into medicine." I expected him to react with great enthusiasm. But, instead, he paused a while, looked at me very seriously, and said, "Son, medicine is a hard mistress, but a good one."

As I thought back, it seemed to me that his statement in some respects describes how I feel about occupational safety and health——

Mr. GAYDOS. I was going to ask you, is it such as he described it?

Dr. MILLAR. It's a hard discipline, but a good one, is the way I would put it.

Mr. GAYDOS. The old timers all the time, if I may, Doctor, all say the same thing, because after you get older and advance in years you want to philosophize. It is very difficult to tell the absolute fundamental truth to a new recruit by saying, "Look, get in there; we need your help."

I know the judges tell some of the young lawyers—we have a potential lawyer here with us on an internship, and her whole family is part of the law action in the community back in Pittsburgh, PA, and I imagine they say the same things. It is very difficult in things like that, "But that, too, shall come to pass," as a wise man once said.

Dr. MILLAR. Right.

Mr. GAYDOS. But I'm glad we have you. We have had our differences, but I think, all in all, I have the utmost respect for you and I think you're doing a good job.

Dr. MILLAR. Thank you.

The discipline is hard in the sense that the problems we deal with are very complex, as you know. The other difficult aspect is that the people who are concerned about the health of workers tend to be very powerful groups, quite vocal, and frequently in serious conflict with each other about the way things ought to be done. That makes the field, I think, hard.

But the field is very good in the sense that this is an important problem, a profoundly important problem, as you mentioned earlier. There are 10,000 workers a year that die on the job in this country. If we were to average that out and put it into the context of how much time we will spend with each other today, we can expect that on the average somewhere between 5 and 10 workers will die on the job during the next couple of hours. Of course, there are 3 million seriously injured each year, and certainly hundreds of thousands that acquire occupational diseases. So this is an important problem, and it is a challenge worthy of the best efforts of anybody.

The other aspect that makes this a good field, although hard, is that these problems are preventable. There are things that can be done about these problems. As you know, the Centers for Disease Control is the Public Health Service Agency designated to be the national focus for prevention. As part of CDC, we are the focus for prevention of work-related diseases and injuries. I feel this challenge very personally, and I am gratified to be part of what I think is a very important activity.

I believe when Congress passed the Occupational Safety and Health Act they were right on the mark. Because of the problem of occupational diseases and injuries and because that problem is preventable, we have a great opportunity; I think the country badly needs an effective NIOSH. If I may say so, without appearing to be too immodest, I think an effective NIOSH is critical to the public health of this Nation. For those reasons, personal and professional, I am happy to share with you today a bit of what we are doing.

The Occupational Safety and Health Act lays out four principal tasks for us as a national institute: First, conduct research on problems of occupational safety and health, seeking ways to prevent or control those problems; second, respond to requests of workers, their representatives, employers, and other agencies to investigate

health problems perceived in the workplace; third, recommend, on the basis of our scientific activities, regulatory action by other appropriate regulatory bodies; and fourth, see to it that adequately trained person power is available to carry out the purposes of the Occupational Safety and Health Act.

These missions or tasks are all reflected in the programs of NIOSH and have been for some time. Briefly, this means that we are responsible for getting the facts on the cause and the control of occupational diseases and injuries and then for disseminating these facts to people who can act to prevent the problems.

When Dr. Harris and I came to the directorship of the Institute in 1981, NIOSH was 10 years old; it had had a number of directors and interim directors during that time, and it had had some turbulence in its growth.

We reviewed the situation at that time, and we concluded that four things needed to be done quickly. The first was to establish mechanisms that would assure the excellence of the science and policy recommendations of NIOSH; the second was to focus the resources of the Institute on the problem in occupational safety and health, namely, occupational diseases and injuries; the third was to define an appropriate role for NIOSH in health promotion activities: and the fourth was to find an appropriate and more active role for State and local health departments in the problem of occupational safety and health. I would like to spend a few moments on each of these.

The reason, Mr. Chairman, we were concerned, with the first, that of assuring quality, is very clear. NIOSH is not a regulatory agency; in fact our testing and certification program is the only purely regulatory activity that we do. We have to rely on suasion and must convince people that what we say is right to get them to do what we recommend. So it seemed to us absolutely critical that the Institute be of such a quality that when we spoke, people could rely on what we said.

We made a number of internal changes, largely under Dr. Harris' eagle eye, to strengthen our peer-review systems. We established the first Board of Scientific Counsellors in the history of the Institute, a panel of outside expert scientists who are continually in the process of advising us on our scientific quality.

Second, focusing our skills on the problem was important because with limited resources we simply could not afford to deal with anything but important problems. We asked our scientists to create what is now known as the suggested list of "(The) Ten Leading Work-Related Diseases and Injuries." We have used that list in setting priorities for the Institute and in planning our research activities.

Third, I would like to take a little more time with health promotion, and be sure it is clear how we have looked at this problem. As you know, health promotion consists of activities designed to convince people they should live in healthy ways. Largely, this concerns smoking, drinking to excess, drug use, exercise, eating properly, et cetera.

We were interested in health promotion because we know there is a very important interaction between the risks people encounter in their environment and the types of health behaviors they under-

take. A very good example of this in the workplace is the case of uranium miners. Uranium miners have an excess risk of lung cancer as a consequence of their work. If they smoke, they have an excess risk as a consequence simply of smoking. But if the two risks act together in the same person, that overall risk is at least five times as great. In other words, one plus one in this case equals five. We refer to that phenomenon as synergism of risk.

We can affect that with a synergism of prevention, if you will, by controlling the environmental risks and improving personal health risk factors at the same time. That is why we were interested in health promotion. We wanted to be sure that workers had the benefit of both sides of the equation.

We are very much aware that a lot of health promotion is going on in the workplace, and much of this was being done with total neglect of the environmental factors. That is the health promoters were primarily concerned with behavioral factors.

So we tried two fairly limited things with health promotion. We have tried to convince health promoters to worry about environmental risks as well as personal risks, and we have tried to broaden their interest to include blue collar and other hourly wage workers who had not previously been a particular target of their activities.

I am happy to report a lot of progress in this regard. I think many health promotion activities now are beginning to include the impact of environmental hazards in the workplace, and they are also being broadened in coverage to include blue collar workers. We think we have done about what we should do in that field. We don't intend to move into health promotion programs in the workplace. Simply having had this influence is really the appropriate role for us.

I think it is also important to understand why we encouraged an expanded role for State and local health departments. The 50 State health departments out there and some 10,000 local, county, or city health departments are the backbone of the U.S. public health system in this country. They represent an enormous resource that can be marshaled and turned against any problem. We have seen that repeatedly with problems this country has considered of high priority.

For a variety of reasons, State and local health departments have quite frankly not been much interested in occupational safety and health for the last couple of decades. They have had other things on their mind; they assumed the Federal Government was handling that problem; and they have devoted their resources to other issues. We felt that we needed them in occupational safety and health, and we felt they needed to get concerned about workers who, after all, live in their jurisdictions just like other citizens.

So we have done a few low-cost things in the last couple of years in an effort to encourage greater participation by State and local health departments. We scraped together a few dollars here and there and put out the notice that we would support some small-scale projects. We were absolutely staggered by the response. We had 67 submissions from State and local health departments all over the country, most of them excellent proposals. We were able to fund 16 of those with the limited amount of money we could put

into this program. But the striking thing to me was we planted a small seed and got a large response. I can assure you that many State and local health departments are now very interested in occupational problems and would like to join with us in confronting these problems.

Just a few examples. Two States, widely separated and very different, the State of Maine and the State of Texas, have just recently passed laws making certain occupational diseases reportable within their jurisdictions. Two other States, also widely separated, have recently passed legislation assuring preventive aspects in the use of video display terminals. Other States are very interested in surveillance activities. We have one State that is now engaging in the surveillance of occupational injuries on a regular basis.

A lot is happening. Getting the traditional public health system of the United States involved again with work-related problems is constrained I think only by the amount of resources one can identify to support it. I have been very, very pleased at the way the States and localities have responded to our encouragement.

Now, while going through these four new directions, as Dr. Harris and I refer to them, we have continued to push the traditional NIOSH activities that made the Institute famous—principally the Health Hazard Evaluation Program, which you are very familiar with, in which we respond to requests to look at health problems in the workplace. In 1984, we set a new record of having completed a large number, 528 health hazard evaluations, the largest number NIOSH has done in a single year.

We have also continued to communicate our policy of prevention to the Nation by making recommendations to regulatory agencies and to others who need to know and who can act on a whole range of hazards. In fact, since July of 1981, we have made 55 such policy pronouncements in a variety of forms, from the traditional criteria document to alerts about emerging problems.

We have continued to do the type of research that put NIOSH in the forefront of occupational safety and health issues. For instance, with respect to video display terminals, we identified some problems associated with their use. We did the kind of research that showed how these problems could be prevented. Now video display terminals all over the world incorporate aspects of the recommendations of NIOSH in their very design—keyboards are separated, terminals turn, adjustable furniture is designed. These represent real-world implementation of some of the research recommendations that NIOSH has made.

We recently published a report of the first documented death in this country due to a robot. Mr. John Moran, who is sitting benind me today, directs our Safety Research Division. They have gathered facts on that particular situation and they have initiated research so that we can offer advice to prevent robot-associated problems in the future. This will be a tremendous development over the next several years, and we are happy to be on the leading edge with it.

We could say the same thing about biotechnology, where we have taken initial steps to at least understand the hazards involved in this technology. While the commercial application of biotechnology has not actually exploded as rapidly as many people predicted, we

will be there when it does with facts and recommendations about how problems can be prevented.

This spring we took a major step in occupational safety and health by convening a national symposium on the prevention of the leading work-related diseases and injuries. For the past 2 years, we were quietly preparing proposed prevention strategies for the first 5 entries on our list of 10 leading occupational diseases and injuries. We presented these proposed prevention strategies at the symposium before 400 of the Nation's leading professionals in occupational safety and health. Then those people spent 3 days reviewing, discussing, and improving our proposed strategies in a wide-open forum in which everybody was permitted to have a say.

The purpose of that activity was to begin sharing toward a better understanding of the nature of these problems. What can be done about them, by whom, how? These are the issues that we wanted to discuss. It was a search for a common ground in this field from which all of us who are interested in protecting workers can work together with a common understanding of what needs to be done.

This symposium, if I may say again without appearing immodest, was a very real success. We have had much favorable feedback about it, and we hope to convene a second symposium for the next five items on our list, perhaps this coming year.

One thing that has become very clear as we discuss these prevention strategies is the need to improve surveillance of work-related diseases and injuries. As you know, this issue already received attention of the Committee on Government Operations. If we are to prevent occupational diseases and injuries, we must know where, when, and under what epidemiologic circumstances these conditions are occurring. It is very difficult to plan prevention without a clear knowledge of the whereabouts and epidemiologic characteristics of the problem. Creating surveillance systems that are adequate will not be easy, but it must be done.

Now, Mr. Chairman, to close, let me say that NIOSH has moved aggressively in the past 4 years to improve its science and its service to the Nation. We have tried to hold high a vision around which the occupational safety and health community can rally in their concern for workers.

As I read between the lines of the Occupational Safety and Health Act, it seems there are two expectations that while not explicit, are very clear. I think that Congress expected NIOSH to be compassionate about the workers who still suffer, and I think that Congress expected NIOSH to lead the occupational safety and health community in efforts to protect those workers. Mr. Chairman, we have tried to do both.

Thank you.

[Prepared statement of Dr. J. Donald Millar follows:]

PREPARED STATEMENT OF J. DONALD MILLAR, M.D., DIRECTOR, NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH, CENTERS FOR DISEASE CONTROL, PUBLIC HEALTH SERVICE, DEPARTMENT OF HEALTH AND HUMAN SERVICES

I am Dr. J. Donald Millar, Director of the National Institute for Occupational Safety and Health (NIOSH) of the Centers for Disease Control, in the Department of Health and Human Services. I appreciate this opportunity to report to you on the activities of NIOSH and our efforts to deal with the problem of preventing occupational injury and disease. As you requested, I will specifically address our activities

concerning the NIOSH National Symposium on the Prevention of Leading Work-Related Diseases and Injuries, our study on video display terminal (VDT) workers, and surveillance. With me today from the Institute are Dr. Elliott Harris, Deputy Director; Mr. Richard A. Lemen, Director, Division of Standards Development and Technology Transfer; and Dr. James Melius, Director, Division of Surveillance, Health Evaluations, and Field Services.

What is the "problem" of occupational safety and health? Perhaps it is misleading to talk about a problem. We are talking about an array of problems, severe problems, changing problems, and problems diverse to an extent that reflects the complexity of the world's largest national economy. When you imagine the number of products produced and services delivered in our Nation, the number of raw and synthetic materials involved, the number of processes applied to these materials, the range of technology existing for these purposes, the pace at which new technology is introduced, and the number of people involved in all of this (over 100 million), the scope of the problems is immense. We may be talking about a worker killed in an excavation cave-in or a pregnant woman working around chemicals that could damage the health of her unborn child, or that child's child. The toll of readily identifiable disease and injury is high; each year, about 10,000 workers are killed on the job, 3,000,000 are seriously injured, and perhaps as many as 100,000 die from work-related diseases.

On the other hand, in fundamental terms we are talking about a problem. Simply, it is that people in our Nation continue to be killed, maimed, or diseased, because of the work they do to support themselves or their families. The same work that has made the American economy the most vibrant the world has ever known, also has an underside of human suffering. It is a shared problem. It is also a problem being attacked by professionals in industry and labor, in NIOSH and in other Federal, State, and local agencies, because as a Nation, we have committed ourselves to doing something about the hazards our citizens face at work. This is a problem faced by industry and labor. Daily together they share the American workplace, the place in our Nation, in our States, in our local communities where work-related diseases and injuries are produced. It is a problem faced also by our universities and other research institutions striving to improve the human condition.

Of course, we do not live in a risk-free environment. All of us accept some risks, some of us accept high risks, such as smoking cigarettes. Our challenge in NIOSH is to provide scientifically sound information on the health and safety risks of the working environment, so that industries, employees, and government agencies fully understand the risks they are confronting. Once that is accomplished, rational risk management decisions can be made by these groups and others in our society which consider the costs and benefits to consumers and employees. Most importantly, this problem we are talking about is largely preventable! It is an unfortunate and unnecessary aspect of the economic strength of our Nation. In the Occupational Safety and Health Act of 1970, we as a Nation declared it to be our purpose "to assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources." As you know, the focus of the Centers for Disease Control (CDC) is prevention-specifically the pevention of premature mortality and unnecessary morbidity. NIOSH, as part of CDC, has the mission to protect the lives and health of America's workers through prevention.

How do we carry out our mission? The Occupational Safety and Health Act gives NIOSH four basic tasks:

1. Conduct research to identify, evaluate, control, and prevent work-related health and safety problems.
2. Respond to requests for investigations of workplace hazards.
3. Recommend to the Department of Labor, on the basic of scientific findings, appropriate standards for regulatory activity.
4. Train occupational safety and health professionals to carry out the mandates of the Act.

These tasks are embodied in programs of NIOSH. We identify occupational hazards through surveillance and by responding to requests for investigations. We evaluate work-related health problems to understand their cause, primarily through targeted research. We develop or discern ways to control these work-related health problems through research in control technology and development of personal protective equipment. Finally, we disseminate information to those who need to know. This is done primarily through the preparation of criteria documents and other recommendations for regulatory action by the Department of Labor and through current intelligence bulletins, hazard alerts, fact sheets, research reports, and articles in the Morbidity and Mortality Weekly Report. Also, we disseminate knowledge by training professionals through the Educational Resource Centers (ERC's) in major

universities, through our projects for introducing occupational safety and health principles into the curricula of schools of business and engineering, as well as through our grants program.

When Dr. Harris and I were placed in charge of NIOSH in 1981, we reviewed the state of NIOSH programs and established four directions for the Institute based on what we felt most needed to be done. We set out to:

Assure the excellence of research and recommendations of the Institute.

Focus the skills and resources of the Institute on the most important work-related diseases and injuries.

Improve the access of workers to the benefits of health promotion.

Expand the role of State and local health agencies in preventing work-related diseases and injuries.

I am pleased to report that we have achieved the first two, and have made substantial progress toward realizing the third and fourth.

To assure excellance, we established a Science Advisory Staff to review all research projects to ensure that the science is sound. We established a procedure to review all projects that have been under way for 3 years to determine if they warrant continuation. We subject proposed research to a more rigorous system of peer review. We established the first Board of Scientific Counselors in the history of the Institute. These 10 highly respected scientists from outside the Institute periodically review the entire NIOSH research program to assure its excellence and relevancy.

In 1982, to assure our focusing on the problem, I charged the scientists of the Institute to develop a list which would represent what they saw as the leading work-related diseases and injuries in terms of severity of effects, frequency of occurrence, and amendability to prevention. In other words, I asked them to bring definition to this problem we are up against, to bring it into our sights. This is the suggested list of "The Ten Leading Working-Related Diseases and Injuries." (See attachment.) Over the past 3 years, this list has served to direct our activities where our experience told us there was the greatest need. It has also served to bring us and the rest of the occupational safety and health community into a broader common understanding of the problem. Moreover, we are developing proposed national strategies for preventing these diseases and injuries. We are also developing 5-year internal programs designed around these ten leading problems.

Health promotion is vital to increasing our impact on the problem, and "synergism" is a key element here. It has become generally accepted that in the United States, behavioral and environmental hazards are the two most important contemporary causes of premature death and preventable disease. The workplace, with its potential exposure to many hazardous substances, is a setting providing unique opportunities for interactions between these hazards, a setting in which environmental and behavioral factors can come together to produce a synergism of risk. This is well illustrated by the interaction between cigarette smoking and mining uranium. Each of these factors taken separately, cigarette smoking and mining uranium, increases the risk of lung cancer. However, if a person both engaged in uranium and smoked cigarettes, the risks have been observed to be at least five times as great as the risk produced by each factor individually!

We have virtually completed defining an appropriate role for NIOSH in health promotion. To meet this "synergism of risk," we are encouraging changes in health promotion activities in two ways which meet two important needs:

First, we are developing health risk appraisal instruments which include information relevant to occupational environmental risks. Health risk appraisal is the principal tool of health promotion; an individually administered survey which indicates the person's health risks and recommends behaviors to reduce those risks. In the past, health risk appraisal did not take into account, in any individualized way, the environmental risks confronted by the individual worker in the workplace.

Second, we have been encouraging practitioners of health promotion to broaden their targets to include blue collar workers and workers younger than 30. This is needed because health promotion has been "marketed" to older and professional population segments in our country. These programs were basically directed to "white collar" workers, between the ages of 30 and 55 . . . yet we know that risks for both injury and diseases are highest for "blue collar" workers, especially under the age of 30.

By encouraging this more effective application of the skills of health promotion, we are encouraging a "synergism of prevention" in which health protection, i.e., environmental controls, and health promotion can work together to protect the health of workers.

We have increased our involvement with State and local health agencies. But, this activity will require our concentrated and expanded efforts over a long haul, if

the full strengths of our traditional public health system are to be brought to bear on occupational injuries and diseases. Much of the extensive capabiltiy in occupational safety and health which characterized State and local health departments before passage of the Occupational Safety and Health Act, eroded and diminished with the rapid growth of Federal activity in this field. When I joined NIOSH in 1981, the level of State participation in occupational safety and health was very low. I am very pleased to report a good start in beginning to turn this situation around. It also happened that around the time we began working for greater State involvement, a knowledgeable and active constituent force was growing in the States. Development of this interest is continuing at what we consider a very reassuring pace.

The State of New Mexico has enacted the first law in this Country addressing the use of VDTs. Texas recently passed a State law making reportable asbestos-related diseases, silicosis, and elevated blood lead levels. When we announced our State Capacity Building Cooperative Agreements program last year, we received 67 proposals representing 44 public health jurisdictions. Of these, we funded 16 proposals, which represented 13 States, for a total of $1,007,366.

We have able to help increase State activity through a number of other important assistance programs. We have five cooperative agreements with States for improving State capacities in accident, injury, and illness epidemiology and surveillance. We have cooperative agreements with three States to develop their capacity to conduct health hazard evaluations (HHE), and have jointly conducted 31 HHEs with State and local health departments. We are regularly providing direct technical assistance and industrial hygiene training to State and local health department personnel. Under Superfund, we have trained approximately 1,200 State health department personnel for work at hazardous waste sites. We will continue this training this year through the NIOSH ERCs. Also under Superfund, we have been securing involvement of State health departments in the occupational medical studies we conduct for the Agency for Toxic Substances and Disease Registery, the Public Health Service agency that deals with health effects associated with toxic exposures under the Superfund legislation. We have provided technical assistance for establishing a hazardous substance registery in Illinois. At the request of State health departments, we have initiated NIOSH staff assignments to State health departments.

Along with our achievements in these four directions, NIOSH continues to carry out its important responsibilities. In 1984, we completed a record 528 HHEs. The requests came from all types of workplaces and all economic sectors; 60 percent of the requests came from employers and employees in the private sector, the other 40 percent from Federal, State, and local government agencies. The HHE program continues to serve as our most important way of staying in touch with the "real world," the problem of occupational diseases and injuries, especially with newly developing problems.

We have been very active in making recommendations for prevention, and where necessary, we have made recommendations for standards. Our policy statements which are disseminated in various forms include (1) criteria documents, (2) responses to regulatory activities of the Department of Labor, (3) current intelligence buiietins--a document which provides new scientific information about an occupational hazard previously unrecognized or which reports new data suggesting that a known hazard is either more or less dangerous than previously documented, and (4) alerts—a short and concise document which provides recommendations on a newly discovered hazard where rapid dissemination is critical. Since 1981, NIOSH has produced 55 policy statements in areas ranging from toxicity of 1,3-Butadiene to the hazards of excavations.

In addition to these activities, NIOSH has kept abreast of progress and potential new developments in occupational safety and health. We recognized the use of VDTs as a rapidly accelerating trend in the United States, and we defined the associated health problems. As we reported to you in May of 1984, we first investigated health complaints related to VDT use in 1979 through our HHE program. We followed up these investigations with research on the potential hazards, and then developed control measures to prevent occurring problems. Most of the VDTs being produced today incorporate features based directly on NIOSH recommendations. Employers are also purchasing ergonomically designed furniture to prevent musculoskeletal problems. We are continuing our work in this area with a major study now under way on the possible reproductive effects of VDT use. We are conducting a retrospective study involving 3,000 communications workers. We plan to begin interviewing them in the fall of this year. The study will then take approximately 2 years to complete.

NIOSH also has research ongoing in other fields of emerging technology. Specifically, biotechnology, such as use of recombinant DNA, is at this point less widespread in its commercial applications. However, while pharmaceutical, agricultural, and other industries are largely still experimenting with new processes, they are paving the way for development of a whole generation of new products. NIOSH has already completed an industrial hygiene study and made recommendations for medical screening of workers in plants using DNA processes. Other NIOSH investigations are well under way in this area. We completed a number of preliminary surveys in plants with fermentation processes using DNA, and are continuing with a more intensive study to identify effective engineering controls.

In addition to the four directions I referred to earlier, we now have two new directions for the Institute; one calling for broadened partnership in attempts to prevent the problem and the other for improved national surveillance. We are vigorously pursuing these directions.

In 1984 and early 1985, we drafted national prevention strategies for the first five conditions on the list of "Ten Leading Work-Related Diseases and Injuries." In May of this year, we sponsored a national symposium and presented the five proposed prevention strategies to more than 400 participating leaders and representatives of the professional occupational safety and health community for review, criticism, and improvement. The purpose of this symposium and of the prevention strategies was to help create a common ground for combating the problem we face together. We sought answers to the basic questions: what should be done, who should do it, and how? From this common ground, we hoped to forge a greater alliance among Federal, State, and local governments, research institutions, industry, and labor, to move forward against the problem.

This symposium was a notable success. For perhaps the first time, a wide cross-section of the professional occupational safety and health community was brought together. Issues were seriously discussed, and a new understanding of the problem and of our respective roles in combating this problem was begun. The five proposed prevention strategies were presented, discussed, and improved. We are now in the process of incorporating all the comments made during the symposium and written reviews received since. Most importantly, we believe the vision which is found in the Occupational Safety and Health Act, the vision of a way towards a safe and healthy American worker, has been moved forward. We are now planning a second symposium for 1986 to deal with prevention strategies for the second five "Leading Work-Related Diseases and Injuries."

One fact that came out loud and clear during the symposium, a fact that was also the subject of the Committee on Government Operations Sixtieth Report, is that the current state of surveillance in our field, particularly data available on occupational disease, is less than sufficient. We have been working actively with the Bureau of Labor Statistics and the National Center for Health Statistics to implement the recommendations made in this report. It is fair to say surveillance is the cornerstone of effective public health practice. It allows us to see the problem. There can be no effective prevention of disease and injury without knowing "when, where, and under what conditions are occurring." The present state of occupational safety and health suveillance is a hodgepodge of incomplete, incompatible, and non-complementary data bases. Establishing effective surveillance is easier said than done. We must find ways, however, of developing more effective surveillance of occupational diseases and injuries by collaborating with Federal and State agencies, by modifying State reporting systems and existing national data sets and by improving the usefulness of State and local morbidity and mortality systems.

In the past 4 years, NIOSH has aggressively improved the quality of its science and has increased its service to the Nation. We have looked ahead to what is coming, and have tried to rally the occupational safety and health community with a common vision on a common ground. We recognize that no single agency or organization alone can protect American workers. NIOSH does, however, have a critical role in providing the scientific research leadership in this important field.

Thank you for this opportunity to testify. We will be pleased to answer any questions.

Attachment.

LEADING WORK-RELATED DISEASES AND INJURIES

Occupational Lung Diseases.
Musculoskeletal Injuries.
Occupational Cancers.
Severe Occupational Traumatic Injuries.

Cardiovasacular Diseases.
Disorders of Reproduction.
Neurotoxic Disorders.
Noise-induced Loss of Hearing.
Dermatologic Conditions.
Psychologic Disorders.

Mr. GAYDOS. Are there any other comments from the panel? There being none, I want to welcome to the committee my good friend from Chicago. I wonder if he has any questions before I start, or do you want me to start first?

Mr. HAYES. Why don't you start first.

Mr. GAYDOS. All right.

Dr. Millar, there have been accusations around that NIOSH, as such, follows the administration, doesn't do its job insofar as it has never actually instigated sufficient investigation that would culminate in a standard to be adopted, and that you're always dragging your feet, that you're an arm of the administration; you don't initiate, and if the administration says that this is taboo, it is taboo and you don't do anything about it.

How about you explaining that and spreading on the record here as to whether—Give me some examples as to what you have instituted and what has ended up and culminated in a standard, that has been adopted. That has been the accusation. I'm not saying I'm making it. If I made it, I would make it very specific and repetitive. I haven't done that. But I want to find out from you if there is any substance to those accusations that you are not autonomous and you haven't initiated a lot of these things yourself.

Dr. MILLAR. Let me say——

Mr. GAYDOS. Before you respond, let me say this. When we put the Act together—and I was a part of that procedure at the time—we argued on the floor of the House the concept of putting NIOSH into being. It was to try to be independent, No. 1, and No. 2, it was to be of such independence that they would initiate an awful lot. You touched on it and you talked about the individual State health departments and agencies and things like that. I don't know if that has come about or not, but these accusations repeatedly find their way back to the committee, that NIOSH is nothing but a tool of the administration.

Can you respond to that?

Dr. MILLAR. Yes, sir, I would be pleased to respond to it.

We are, in fact, part of the administration and, as part of the Public Health Service, we work for the administration. But I think the great wisdom of the Occupational Safety and Health Act was that it separated the problems of science and the problems of regulation and put them in two different departments. We have felt considerable independence in pursuing scientific activities and getting at the facts about occupational diseases and injuries. Then on the basis of those scientific facts, we made the recommendations we thought were appropriate and timely to protect the health of workers. We are charged with that in the act, and I think we have aggressively carried out that mission.

It is true, not all of our recommendations get implemented by other people. All our criteria documents make specific recommendations for standards, but if you look at the number of criteria doc-

uments we have done over the years and the number that actually resulted in standards, there is a vast difference. It is our responsibility to provide the scientific documentation and to make the recommendation. Whether or not it becomes a standard is an issue that involves other factors and other agencies and society expressing itself in a variety of different ways.

I think our record is clear; we have certainly initiated a number of things. The first criteria document we ever wrote, for instance, was on asbestos. Over the years we have maintained a consistent position of taking the initiative to see that the workers who have to deal with asbestos are aware and are able to provide protection, and that everybody knows what the concerns are about asbestos. At times we have initiated things and have not seen the sort of response we think would be appropriate to protect the workers.

Mr. GAYDOS. Will you have enough money then to do the spade work—and by spade work, I am indicating the investigation, the scientific aspect of a problem, which I think you so properly point out was the intent and purpose of establishing an agency separate and apart, going professional as distinguished from administrative—do you have enough money and are you doing enough work there?

Dr. MILLAR. Let me tell you a little about what we have done in terms of finances to assure that we are able to continue our investigative activities.

We have, of course, as the chairman well knows, experienced some reductions in the resources allocated to us over the years. What we have done is to take cuts where we thought they would have the least impact on our ability to get at problems that actually occur in the workplace. For instance, with our Health Hazard Evaluation Program, of which Dr. Melius is in immediate charge, despite reductions in the budget, we have actually increased the numbers of health hazard evaluations being done, and we have managed to stay in close touch with new developments as they occur in the workplace.

I am sure you have never had any Government official come here and tell you that he has enough money; I have more than enough good ideas of ways to spend money. But taking the overall view, we understand that the country has economic problems and that these problems must be dealt with. We expect to take our fair share of responsibility.

I think it is fair to say that we are able to stay in touch with emerging problems in the workplace in our present situation.

Mr. GAYDOS. I think we all agree that you never have enough money. There have been accusations made, professionals and others have made the point that we're just spending a pittance of what we should be spending as far as your activities are concerned. Do you have any comment on that? I gather from your information that you are somewhat satisfied with your budget.

Dr. MILLAR. Well, if I were in a position to allocate the whole national budget, I might cut it a little differently. Quite frankly, I believe we don't invest enough in prevention in this country on any front, and especially on this front, where we have a tremendous problem with people being injured and dying on the job every hour.

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What our budget amounts to, prorated over all the workers in the country, is about 50 cents per worker per year. I don't think you buy a whole lot of insurance for 50 cents a year.

Mr. GAYDOS. When you have a chance or opportunity to argue, do you argue for a larger budget, or are you part of the team and quietly sulk away and take what's given to you?

Dr. MILLAR. We are granted several opportunities during the year to make overtures to CDC, initiatives for spending various additional funds that are made available, beyond the regular budget process. We have taken advantage of every one of those opportunities; we have put in several initiatives at each offering and, indeed, several of those have been approved and funded.

I would like to say here that the two directors of CDC that I have served under as Director of NIOSH, both Dr. Foege and now Dr. Mason, have responded warmly to NIOSH and, within their constraints, have devoted additional resources to our program, both in cash and in people.

Mr. GAYDOS. All right. Let me take another tack and ask the question: Do you feel the budget for NIOSH is adequate for you to fulfill the task assigned to NIOSH? If you could say yes or no, it would be appreciated.

Dr. MILLAR. Our budget is obviously adequate to do the task that has been assigned to us——

Mr. GAYDOS. Is that a yes or no?

Dr. MILLAR. At the moment I think we are carrying out our task, well with the funds that we have, but there are many, many problems not being explored that could be explored were resources to be increased.

Mr. GAYDOS. Then I'm going to put down behind that question a "yes" and "no". [Laughter.]

Would that be pretty accurate?

If you had more funds available, what would you do with them? Could you give me an answer there, please?

Dr. MILLAR. Let me give you several thoughts on that. There are, of course, some specific items that need to be explored and where we could expand our investment, given the additional resources. A key one is surveillance—I already mentioned that. There must be better surveillance of these problems and, given the additional resources, a number of things could be done.

There is also the matter of safety and injury control. Under Mr. Moran's leadership, we have taken quite an aggressive stance in the last couple of years with respect to occupational injuries. At the request of OSHA or other agencies that have jurisdiction, we are now regularly fatalities in the workplace. Indeed, Mr. Chairman, we have two teams in the field at this very moment investigating fatal accidents in the workplace. If we had additional resources, we would like to increase our investment in the area of preventing injuries.

Then there are some crosscutting issues, Mr. Chairman, that I think we need to consider. You know over the long haul, the strength of a scientific outfit like NIOSH depends on its ability to attract and retain the best available scientists. In my experience, the way one does that, is to provide an environment which enables them to be at the top of their art, the state-of-the-art. That means

we must have the best equipment, we must afford scientists opportunities for training and updating with new techniques as they come along, and we must provide opportunities for them to embark on new and interesting research. Over the long haul, we would with additional resources invest in keeping our equipment right up-to-date, keeping our scientists well trained and well stimulated with new activity. In that way, we could ensure that this Institute, which has been so useful to the Nation this far, retains its excellence into the years ahead.

Mr. GAYDOS. You have to pay them, too, don't you?

Dr. MILLAR. Yes, sir. Within limts, however, what you pay the scientists, is not as important as giving them the opportunity to achieve excellence in the field. We have, I think, reasonable pay. Salary is not a problem with us in terms of attracting good scientists.

Mr. GAYDOS. What is your turnover, Doctor? Just rough figures.

I am really amazed to hear that because materialism seems to be on an almost uncontrolled scale today in the country, and it is good to hear you have dedicated professionals. You have got to pay them. I still think you have got to pay them.

Dr. MILLAR. I will have to provide you a specific. I can't give you the figures.

For FY 1984, the turnover rate for NIOSH personnel was 7.7 percent.

Mr. GAYDOS. All right. It's not that——

Dr. MILLAR. I would like to say a word, though, about some of the examples we have. We have lost a scientist or two here and there to the academic system because they perceive more opportunity there to initiate a program, an expanding program, and to deal with new issues. Unfortunately, when you're in a situation of declining resources, it is very difficult to provide scientists the opportunity to engage in and initiate new things. I think that is a problem we have.

Mr. GAYDOS. I will yield to Mr. Hayes from Chicago.

Mr. HAYES. Thank you, Mr. Chairman. I have just been advised that I do have to go to another hearing so they can start. But I did have one question in the same vein you were asking.

You mentioned, Doctor, that you had scraped together—I think I'm using your terminology—a few dollars here and there for your program. Are you currently operating with a federally funded budget?

Dr. MILLAR. Yes, sir.

Mr. HAYES. Are you getting enough money? I'm just curious.

Dr. MILLAR. Well, with the State initiatives, what we did was to pool what amounted to roughly $1 million from several sources. About half of that we actually scraped together within NIOSH, and then Dr. Mason supplemented that with some moneys from the Centers for Disease Control overall. Then another center at CDC, the Center for Environmental Health, chipped in a little. Out of that we were able to get a million dollars and to fund these 16 projects in the States. So we have gotten some help from——

Mr. HAYES. But you could use some more money, though, couldn't you?

Dr. MILLAR. As I say, we had 67 proposals for those moneys. We were able to fund 16. The difference between 67 and 16 included many, many excellent proposals.

Mr. HAYES. You mentioned something also about a death due to robots which certainly I wish you would elaborate on a little bit. Are you just researching in this field or what?

Dr. MILLAR. With the chairman's permission, could I call on Mr. Moran, who is here, to answer that? John is well acquainted with all the—–

Mr. GAYDOS. We're all in the same rocking bed, so come on up. Would you identify yourself for the record?

Dr. MILLAR. Mr. John Moran is the Director of our Division of Safety Research located in Morgantown, WV.

Mr. GAYDOS. Let me, if I may, explain that the gentleman from Chicago all of his life, I think, has been affiliated with the labor movement.

Mr. HAYES. That's right.

Mr. GAYDOS. That's why robotics, as such, what they are doing and how they are going to affect the labor movement is of utmost importance.

Mr. HAYES. That's right.

Mr. GAYDOS. That's the nature and the background of the question.

Mr. HAYES. They are replacing people now, and I understand they may be killing them, so I'm interested.

Mr. MORAN. We were advised by a county medical examiner that a fatality had occurred in this case associated with a robot operating in a supply industry supporting the automotive industry. As part of a request from that medical examiner, we conducted an in-depth, detailed investigation of that fatality. We concluded that this was the first publicly documented robot fatality in the United States, and we estimated that in 1984 some 13,000 robots were in use in this country. Some projections indicate that number will approach 100,000 by 1990.

The problems associated with robots, as we found in that investigation, were simply that safety issues were not considered in the development and application of that new technology. It is a history we have had in this country repeatedly, of introducing new technology and then trying, as a consequence of negative events, to teach our workers how to work around it safely.

We do have some other limited information, not comprehensive, suggesting that about 70 percent of the injuries associated with robots are due to inappropriate actions by the worker, such as not paying attention to fenced-off areas and getting into the operating zone of the robot. Now, this may also be due, of course, not having appropriate safety protective devices in place.

The other side, 30 percent of the injuries we have seen with robots were due to equipment failure. That is, when workers were programming a robot, they hit the start button again for example, there was an electrical failure in the circuitry, and the robot did something totally unanticipated.

It is important, I think, to realize two things. One, most robots in industry today are hydraulic and two, they are very powerful. An example is a robot used to remove a car hood from a stamping ma-

chine. The robot went crazy and threw it 300 feet through the air across the factory.

But what is also emerging in the workplace——

Mr. HAYES. I used to work in the same room with them.

Mr. MORAN. That is one way some of the more advanced industries have dealt with that problem, to literally isolate the devices in separate rooms, if you wish.

The other thing we see is that we're into the second and approaching the third generation of robotics for application in the industrial environment. We are moving more and more toward electrically rather than hydraulicly operated robots.

There are two problems with electric robots on the plant floor. One, you can't hear them, and two, they move very, very fast in some cases. So they often can get you before you even know they're on. We believe this is an area of technology that is advancing.

In principle, the application of robotics in the workplace should reduce worker injuries because they are most often used in operations that are hazardous and risky to workers. But what we are finding is that we now have a new class of worker exposed to risk, the maintenance and service people, not the production-line people.

Mr. HAYES. Thank you, Mr. Chairman.

Mr. GAYDOS. Let me say for the record before I ask you some more questions that I want to thank you, Dr. Millar, and those who accompany you, for presenting testimony before the committee on VDT's. It was very valuable. Our report is coming out shortly. In our report we do mention the contemplated study and the interest of NIOSH as far as video display terminals.

As I understand, of the numerous requests we are receiving for that report, there are very few agencies, if any, other than yours, that are contemplating any kind of an in-depth study or review nationwide on a very sensitive subject. So I do want to commend you for that foresight.

Dr. MILLAR. Mr. Chairman, I think that could be said about many, many things in the occupational arena. There are not a whole lot of folks out there——

Mr. GAYDOS. I knew as soon as I gave you one you would start putting the other ones in. Let me hear them. Go ahead.

Dr. MILLAR. I just think, as a generic observation, that one of the profound reasons it is important to have a healthy and effective NIOSH is because we are interested in those kind of issues and not too many other people are.

But since you raised the issue of the study we are doing on VDT's, I am sure you recall from our previous hearing that basically the three aspects of VDT's we have been concerned about are, one, the matter of ergonomics and possible musculoskeletal injuries, and two, damage to the eyes. We have dealt with those issues most effectively. Three is the question of reproductive hazards. Although we don't see any reason for alarm, we are doing a major study to get the facts and get to them in such a way that we can either reassure people convincingly or actually identify a problem if there is one.

Dr. Melius and his people are right now in the process of getting that study underway. They have had some difficulties in identify-

ing appropriate cohorts and one thing or another. I wonder, Jim, if you would comment on the status of that study as of the moment.

Dr. MELIUS. Our study protocol has been reviewed by an outside group of scientists. We have the appropriate work assembled to initiate that study and will start interviews in the fall. We will be looking at directory assistance operators, working in major telephone companies in the South; we will be doing telephone interviews with approximately 3,000 women, 1,500 working with the video display terminals and 1,500 not exposed in those situations. Those interviews will probably start some time this fall. From that population, we will be able to put together at least some conclusions about reproductive hazards associated with the use of video display terminals.

Mr. GAYDOS. Doctor, your numbers for annual worker deaths and injuries are considerably higher than those reported by the Bureau of Labor Statistics, and even those presented in the Office of Technology Assessment's recent study on occupational illnesses and injuries.

How did NIOSH arrive at its figures, because we will be using those figures? Could you explain?

Dr. MILLAR. I am going to ask in a minute if Mr. Moran would comment on that aspect again. But you said it best at the outset that the number depends on who is doing the talking. There are many systems estimating. None of these systems are comprehensive enough or effective enough to come up with a figure that is indisputable. We have reached our estimates based on the surveillance systems that we use. These include data from the Bureau of Labor Statistics and our own national electronic surveillance system.

But, John, could you comment in a little more depth about where that 10,000 comes from and why ours should be believed and others not?

Mr. MORAN. With regard to the 10,000 fatalities, we have about eight different safety or injury surveillance systems in Morgantown. If we look at the fatality issue alone, the numbers range from a little more than 3,000 in the BLS annual survey to estimates of 11,300 by the National Safety Council. Those are two extremes. In nearly any other data base you might look at to assess a number, it will be somewhere in between.

The difficulty is, in any data base you look at there are elements that are missing. So we examine those data bases and cross-compare them to try to come up with an estimate that includes all aspects where occupational fatalities may occur. We spent a good deal of time developing that number of 10,000, and I think we can support and justify it very well.

Our injury statistics, if we look, for example, at the serious injuries of 3 million a year, are quite compatible with the information we get on workmen's compensation cases. The number of 10 million for total injuries is also consistent with the national estimates that we project based on our national electronic injury surveillance system network, which we run as part of the NEISS system in association with the Consumer Product Safety Commission.

Interestingly, with regard to the 3 or so million workers who are seriously injured every year, that number has not changed since 1945.

Mr. GAYDOS. It hasn't changed?

Mr. MORAN. We have had 2.5 to 3 million workers seriously injured every year since 1945. The rate has gone down somewhat, of course, because the number of workers has gone up. But the cost aspects are important. The Safety Council estimates that we as a nation face an annual cost in excess of $33 billion associated with occupational injury alone. Others believe that estimate is low.

Mr. GAYDOS. Is it fair for me to conclude then that you think you have enough efficient programs operating that your information on deaths and injuries is about as accurate as you can get?

Mr. MORAN. It is my belief that our estimates are quite accurate and very supportable. But as part of a new initiative we began this year, we are putting together for the first time information to establish a National Occupational Fatality Data Base. We are collecting death certificates from all the States and will be coding and analyzing them. For the first time, in about a year to a year-and-a-half from now, we will actually know how many occupational fatalities there are. We will not need to estimate it from the various data bases.

Mr. GAYDOS. Your programs seem to be superior. Do they also relate to the disease questions as distinguished from injuries?

Dr. MILLAR. Mr. Chairman, the surveillance of occupational diseases is done much less effectively than that for occupational injuries. Even with the problems involved in the surveillance of injuries, it is a good deal better than the question of disease surveillance. We have been concerned about this for some time, and it was the subject of the previous congressional hearing that Congressman Frank held on this issue.

I am going to ask Mr. Lemen to comment on this issue in more detail, if you would, Dick.

Mr. LEMEN. As Dr. Miller indicated, in the area of illness and disease, it is much harder for us to determine those diseases that are associated with occupational exposure. Oftentimes there are confounding exposures, such as the synergistic effect that Dr. Millar talked about between cigarette smoking and exposure of uranium miners. The same is true for asbestos workers and others.

However, some figures have been developed. In the early part of the 1970's, a President's report to the Congress on occupational safety and health projected in the neighborhood of 100,000 occupational illnesses per year. We would be happy to provide to the record copies of those reports and where we get those figures. But it really is a guestimate to determine exactly how many illnesses are actually related to exposures that the worker may have received 20 or 30 years ago on the job.

[Information requested follows:]

The National Institute for Occupational Safety and Health (NIOSH) initially provided the estimate of 100,000 deaths annually which were attributable to occupational disease in 1972 in respnse to requests for estimates of disease, deaths, and disabilities due to occupation. The estimate first appeared in the President's Report on Occupational Safety and Health for 1971 (dated May 1972), page 111, which stated "there may be as many as 100,000 deaths per year from occupationally caused diseases." The figure was derived by examining mortality rates for persons

employed in a wide variety of occupations and comparing these rates with mortality rates of the general population, taking into consideration such factors as age and socio-economic level. Occupational groups whose mortality rates were greater than those in the general population were considered to have an excess death rate attributed to their working environment after adjusting for socio-economic factors.

We recognize that this figure is a rough estimate and open to legitimate question. It has been difficult to secure more precise figures because occupational illnesses are too often improperly diagnosed and are vastly underreported. A survey that we conducted in selected small industries in Washington and Oregon indicated that as much as 90 percent of the occupationally related medical conditions we observed had not been reported on workers' compensation claims or OSHA reporting forms. We are pursuing various alternatives for providing better measures of the impact of occupationally related disease, disability, and death as a part of the NIOSH program of occupational health surveillance. These efforts will use data from the Social Security Administration Disability Award Files, from the National Center for Health Statistics Health Interview Survey, and from a program of surveillance cooperative agreements between NIOSH and states.

[Excerpt from 1972 President's Report attached.]

THE PRESIDENT'S REPORT ON OCCUPATIONAL SAFETY AND HEALTH

INCLUDING REPORTS ON OCCUPATIONAL SAFETY AND HEALTH

BY THE UNITED STATES DEPARTMENT OF LABOR

(PAGE 1)

AND BY THE UNITED STATES DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

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Chapter 2

OCCUPATIONAL SAFETY AND HEALTH PROBLEMS

BACKGROUND

Over 90 million American men and women spend 25 percent of their lives in the workplace. The deterioration in health quality which occurs as a result of exposure to hazards in the workplace is not well known because until recently there has been no mandatory national reporting system for occupational injuries and illnesses, and the few State reporting systems in existence are incomplete and nonuniform.

Total deaths annually from job-related injuries have been placed at over 14,000, with an estimated 2.2 million disabling injuries. The National Health Survey conducted by the Health Services and Mental Health Administration's National Center for Health Statistics has estimated that the average worker experiences 9 days of absence and more than 18 days of restricted activity due to some type of job-related disability per year. On the average one out of eight workers will sustain a job-related injury each year. Ten times as many man-days are lost from job-related disabilities as from strikes.

The incidence of occupational disease is less well known, but recent estimates indicate at least 390,000 new cases of disabling occupational disease each year. Based on limited analysis of violent/non-violent mortality in several industries (see Table 2-1) there may be as many as 100,000 deaths per year from occupationally caused diseases. Health deterioration at the workplace results from a variety of hazards and manifests itself in a variety of forms. These range from the overt, classic, occupational diseases such as lead and mercury poisoning, to the insidious, delayed effects of exposures to noise that cause partial or total hearing loss and to dusts that produce fibrosis of the lungs. Even beyond these effects, there are the considerations that exposures to some occupational hazards will cause, promote, or contribute to the development of cancer, hasten the onset of certain degenerative diseases, or shorten the life span.

TOXIC SUBSTANCES

A toxic substance has been defined as one which demonstrates the potential to induce cancer, to produce long term disease or bodily injury, to affect health adversely, to produce acute discomfort, or to endanger life of man or animal resulting from exposure via the respiratory tract, skin, eye, mouth, or other routes in quantities which are reasonable for experimental animals or which have been reported to have produced adverse effects in man. The need for a list of toxic substances is recognized in the Act with the requirements of section 20(a)(6) that the Secretary of HEW shall publish within 6 months of enactment of the Act and thereafter as needed, but at least annually, a list of all known toxic substances by generic family or other useful grouping, and the concentrations at which such toxicity is known to occur.

NIOSH has met this requirement with the publication of *Toxic Substances—Annual List 1971*. This publication is available from the U.S. Government Printing Office, Washington, D.C. for $6.75. Approximately 5,000 substances were included in this first list.

For the purposes of the list, a toxic substance was defined, exclusive of radioactive chemicals producing serious effects due to radioactivity, to include all mined, manufactured or synthesized inorganic and organic substances, including drugs, food additives, and pesticides, as well as refined

Mr. GAYDOS. Do we have any program to look at what we're doing or to change the attack on it, or are we just going to presume that that's it and leave it go at that?

Dr. MILLAR. We have, Mr. Chairman, a lot of ideas about what needs to be done in surveillance. Many of them we think are most promising, and I will shortly ask Dr. Melius, in whose division surveillance activities are done, to comment in more detail.

But let me say, what we want to do is improve overall a number of systems that already exist, and also perhaps take some new initiatives to fill gaps. Basically, we are now working closely with the Bureau of Labor Statistics and with the National Center for Health Statistics of the U.S. Public Health Service to improve the various systems that already exist for collecting data on occupational illnesses in the workplace.

The other major thrust we are undertaking is to stimulate the States to include occupational diseases in their ongoing reporting systems. As I mentioned earlier, several of the States have already responded by passing laws requiring the reporting of certain occupational illnesses.

Jim, would you leap in at this point?

Dr. MELIUS. Yes; just to expand a little on the State systems, we now have agreements with five States—including the State of Pennsylvania, which was just begun within the past year or two—to develop better ways of looking at occupational disease within these States.

We have developed a variety of programs. Some are very simple, to expand on death certificates by coding the information on where that person worked and what their usual occupation was. Then we can pull together those statistics to give us some idea of what the overall contribution of the workplace is to different types of disease. This has worked very successfully in the State of Washington, where this kind of system was pioneered.

We are developing systems to get better reporting of occupational diseases. Several States are collaborating with us to develop systems for the reporting of pneumoconiosis—for example, silicosis—among workers, on a trial basis, to see what methods would work to provide better reporting and better counting of those cases.

We are working with the reporting on lead poisoning and working with States to have laboratory reports. Whenever a lab report indicates a high lead level, it would be reported to the State health department. We could then look at how that related to specific industries within that State. We have done that in the State of Ohio with the workers' compensation system. We are expanding that now in the States of California and New York. We feel that by working with the States we are able to look at different methods to improve these approaches. With the National Center for Health Statistics, we are expanding the coding of these death certificates with occupational information to States throughout the country. I think we have trained something on the order of 30 States now to start that process. It is not as complete as we would like, but it is a start in the direction to provide better data.

Mr. GAYDOS. It is admirable that you are gathering these statistics. But am I wrong when I conclude that that is just about what you're doing? Let's assume now that you have gathered these sta-

tistics—and I want to commend you for that, that with your limited budget you're instituting these new, fresh programs, gathering statistics. Hold that in abeyance for a minute. And I want to commend you, Doctor, for your recent symposium in developing preventive strategies for the leading work related illnesses and injuries which you talked about, and you've got another one now that will be going on.

The question is, though, in my mind, now that we have these things, what are we going to do about them, about the comments, about these symposiums and what these statistics indicate to us in their final form. When it is all brought together and we have all this gathered, what are we going to do with the information? Will we recommend standards as we have in the past and let them go by the wayside, or recommend changing some existing standards? What do we do with them, Doctor? Could you throw some light on that, or maybe you have some programs in mind on how you're going to handle it.

In my mind I have to put on the record the fact that in 1978 or 1979 you had recommended some standards regarding MIC down there in Institute and nothing was done. I am pretty sure it was about that time that you were doing that, or had done it. That's what bothers me.

It is really a dark blot on this Nation's health and safety programs, at this late date, just to be putting on death certificates that this man died from what we call the "foundry cheer", silicosis or pneumoconiosis. It is shocking almost, while every European nation is 50 years ahead of us. I'm not exaggerating.

It is really fundamental, that something like that, where a medical profession fills out a certificate, that no Government agency, State or Federal, ever required it to identify what happened to the individual.

Go ahead, Doctor. What are we going to do with these things?

Dr. MILLAR. I agree with you that the situation is appalling. The thing that disturbs me, as I said in Representative Frank's hearing, is not that we're behind other countries; it is that occupational safety and health surveillance is behind the rest of surveillance in this country. I said in the hearing with Representative Frank that occupational safety and health surveillance is 75 years behind infectious disease surveillance because infectious diseases were required to be reported beginning back in 1913; it has been consistent ever since. The list of reportable diseases has expanded gradually over the years from 5 initially to some 35 or 36 now. But not a single one on that list is an occupational problem, even today.

Several States are now moving in that direction, and I am confident that within the next 5 years there will be in every State, some nationally reportable, occupational problems. But that will just be a start.

You also touched on another key aspect of the surveillance function: there needs to be action on surveillance data. We have known this for years in the infectious disease field. If you just collect the information, and even analyze it; but do not take some action on it—such as at least feedback to the people who reported—the systems tend to wither and die of disuse. It is very clear that physi-

cians and others have more important things to do than report information that will lie around and not be used.

We think that surveillance is the key to understanding problems. It is also the key to triggering action. That action can be simply reporting back an analysis of the information; it can be conducting a further investigation of the situation; or it can be exercising some preventive intervention.

We have the responsibility to collect the information and to react to it with investigative capability. But we are not the arm that is required to go in and intervene. Now, if I were a local health officer—take my own county in Georgia, Dekalb County—I would have all that in one body. I would be responsible for the collecting and investigating and for taking the necessary action. As you well know, health officers frequently have to do things like that. They close restaurants and do other things that represent direct interventions. But NIOSH does not have that responsibility. So we must rely on our ability to convince other people of the need for taking action.

That is why we are creating these prevention strategies. We want to be as clear as we can in saying to other people who are in a position to act "Here's the nature of the problem, here are the things that can be done about it, and we encourage you to do it."

Mr. CHANDLER. Mr. Chairman, may I ask a clarifying question on that point?

Mr. GAYDOS. Yes, but I just want to ask one question right here.

Would it be acceptable to NIOSH, should we in some mysterious way be able to give you that authority, would you accept it and do you think you need it?

Dr. MILLAR. Well, I think, as I indicated earlier, the Occupational Safety and Health Act was very wise to separate those functions, because it enables the scientists to continue to speak, to continue to do the science, and to develop the facts and make them available. Whether society decides to act on those is a matter that I think varies in societies from generation to generation, depending upon perceptions.

We want to be sure the scientists are continually in a position to be able to speak and to speak clearly and with documentation.

Mr. GAYDOS. I yield to Mr. Chandler.

Mr. CHANDLER. Dr. Millar, being new to the committee, I am not as familiar with NIOSH as is the Chairman. You were talking about the collection of data and the requirements. Could you explain to me what the requirements for reporting are now and what the limitations are and what, if anything, ought to be done congressionally about those reporting requirements?

Dr. MILLAR. A variety of systems are in place that require information, by some parties from other parties. For instance, the Bureau of Labor Statistics requires information from employers on a periodic basis about the cases of occupational illness or injury that they see. Other systems, such as the workmen's compensation system, collect information as part of paying out a claim or what have you. That information is then available for analysis to determine a case count.

The system I am very fond of is the State health department system, in which the States collect information. This is not a Feder-

al jurisdiction. State governments require people in their jurisdictions, who see a case of this, that or the other, to report that case to the health department, which can then take appropriate action.

Mr. CHANDLER. Is that pretty uniform?

Dr. MILLAR. It is very uniform across the Nation for infectious diseases. Increasing numbers of other conditions are now being considered for entry on that list.

What we would like to see is the same uniformity for at least a few occupational problems. It need not be exhaustive. After all the list of possible occupational problems is miles long. But we have defined a list of sentinal health events, so-called, with about 51 entries of key conditions that are known to be occupational. In the States, like Texas and Maine, that have put these systems in to operation, they have generally focused on two or three principal ones, like silicosis, asbestos-related diseases, and elevated blood lead levels. This is not an attempt to be comprehensive but to begin to understand where the problem areas are.

With infectious diseases, they started out with five, but as they began to understand those five and to deal with newer problems, they gradually added to the list. We now have a very comprehensive national surveillance program on infectious diseases. It is the best in the world, without question. But that is not true, I believe, of occupational illnesses.

Mr. CHANDLER. If the committee decided that we wanted to pursue a requirement of reporting on those work-related problems, how would you suggest we go about it?

Dr. MILLAR. I would suggest that NIOSH pursue the avenues it already has planned and is looking at. We will be in a position to commit to those sufficiently, to carry them on, and to get them done. I think we have a feel for what it will take to move toward a comprehensive, meaningful system.

I am not particularly fond of a Federal law that would require reporting a la the State system. We have frequently seen that if there is not a willing spirit on the part of the States and localities to deal with this issue, you may get a few reports, but it will not be comprehensive. They will not respond to the data and investigate with the same vigor and aggressiveness as if they, themselves, had adopted these as reportable conditions. If they adopt it on their own, then we can look to them for strong cooperation, follow up, and investigation.

Mr. CHANDLER. Do you feel that simply by working with them you can move them in that direction?

Dr. MILLAR. We already are. I think some of the events that I related earlier are clear indications that a large majority of States want to move forward in this program. But, quite frankly, they have money constraints as well. A new surveillance program doesn't cost a large amount of money, but it is going to cost a couple hundred thousand dollars to crank it up within a State. Generally that is money, the States simply can't lay their hands on for a new program.

Mr. CHANDLER. I am sure it is one thing to know that someone was killed in an accident on the job site, but it is another thing to know that someone who is past retirement succumbed to a disease

that was brought about by exposure to a chemical or something during their working career.

Dr. MILLAR. Exactly. I appreciate your making that distinction because I hadn't done that. That is one of the key advantages of using the public health system as a whole for this purpose. Any system that goes only to employers or employee organizations or other people who are associated contemporarily with the workplace will miss a lot of those problems that occur, problems that are seen by physicians and health care personnel in hospitals out there, who do not make an immediate association with this as an occupational problem. The folks who are retired, who have gone on to another job, or who have moved to another State are going to be seen by physicians and in hospitals in the general community. Whatever we do in surveillance, we must find a way to include those encounters in the net if we're going to define the problem.

Mr. GAYDOS. Doctor, on that point, could you enlighten the committee on how a Hopewell could occur down in Virginia, where we had Life Science Industries and Allied Chemical involved, where we had pesticides working their way into the bloodstream of the workers in the plant. And now the James River today, you still cannot eat the fish out of the James River.

How does that fit into this, as a matter of explanation?

Dr. MILLAR. You're speaking of the Kepone tragedy?

Mr. GAYDOS. Yes.

Dr. MILLAR. That is a very key issue. I am going to ask Dr. Melius to comment on that because some of his people were directly involved in those investigations.

I would just simply say I grew up on the banks of the James River, and I used to eat the fish——

Mr. GAYDOS. That was before the contamination reached a certain level. I'm happy that you're here with us.

Dr. MILLAR. We joke about those kinds of things, and we joke out of our sadness. Before I turn to Dr. Melius, that is an example of another issue that concerns me. Here you have an example of the repeatedly occurring phenomenon, a problem that begins in a plant and soon is a problem of the community. Things like this issue and Bhopal demonstrate that problem.

These days the company fence doesn't separate the population from the workers. The workers are exposed first, and worst, in these issues, but generally speaking, soon it is a community problem. The kepone one I think is a very clear concern.

That is one of the reasons it is so important for us to be in the same location with our Center for Environmental Health, which is working on that end of the problem, the community environmental problems.

Jim, would you say something about the Kepone matter?

Dr. MELIUS. There are a couple of issues that come up here. First, it was an incident that was investigated by Centers for Disease Control, had been reported to the State Health Department, which initiated the investigation of that particular problem. I think it points out the fact that a chemical can be used in a way that the hazards are not recognized, at least concerning problems in neuropathy that would occur among the workers from that exposure. The workers were essentially the "test animal" that by which

we learned and how nerve damage could be caused by this particular chemical.

That is also why the field of occupational health is so complicated. It often requires animal testing to determine these health effects before the introduction of these chemicals into the environment. Then we learn the safe levels for controlling those chemicals in the workplace and in the general environment. One has to pull all that information together.

But at the same time a system for reporting these occurrences is very important because some things will slip through all our preventive actions. We must have ways to respond rapidly to those occurrences to prevent these types of incidences for a greater number of workers.

We had a similar instance 4 years ago with a new chemical introduced in one plant in the South. Four workers received severe nerve damage from this chemical, which was previously unrecognized as a hazard. A single physician finally saw the four workers, reported it to NIOSH, and we were able to do an investigation. On the basis of our investigation, the company agreed to take the chemical off the market.

Mr. GAYDOS. I agree we are discovering them maybe more readily. But would I be way off if I postulated that we have literally thousands of these cases existing, where you jump from Hopewell, VA, down to Institute, WV. Would I be far off if I said they were hidden throughout our occupational activities in this country, that there are literally thousands of such cases?

Dr. MILLAR. The way I would respond to that——

Mr. GAYDOS. Are you afraid with me?

Dr. MILLAR. I am very concerned. I would say from our experience with the Health Hazard Evaluation Program that Dr. Melius runs, that we have not been surprised, at least not in the last 4 years. We haven't been caught from the blind side by unexpected problems. We have been there as a consequence of our health hazard evaluations and have seen the new developing problem.

Now, clearly, in terms of chemical exposures, it seems to me, the answer to all of this is a truly effective system of premarket testing of chemicals. There should be a really good basis for knowing there is some safety before things go into the marketplace. That is not the sort of program we are responsible for, but, if we're talking about true primary prevention, that is the avenue. Before things go into use and workers are exposed, we should be sure we know what the hazards really are.

Mr. GAYDOS. We're trying to push money on you which doesn't exist. Are we off base when we suggest that maybe NIOSH should prepare some criteria, some documents of some sort on their own initiative, if they had the money and the personnel to do it, and maybe it would include this area which both of us are mutually concerned about?

Dr. MILLAR. We have a lot of good things we could do with any money that you can send us. Criteria documents may or may not be the appropriate thing. Criteria documents are specific instruments that make a proposed recommendation to OSHA or MSHA for specific rulemaking activities. But plenty of things can be done

that involve our recommending both policy and specific preventive actions or regulations.

I think the big thrust we really need is to be sure that research in this field is adequately funded over the long haul, because otherwise we won't always be in the forefront. We will be playing catch-up if the research activity is not well nourished.

Mr. GAYDOS. As you view your responsibility, do you agree that you have the power and you should in some instances recommend standards based upon criteria documents you may prepare as a result of the accumulation of facts and statistics?

Dr. MILLAR. We certainly do feel that, where appropriate, we should prepare criteria documents and make specific recommendations for rulemaking. We have been doing that at the rate of about three to five criteria documents per year. The decision to do that is largely based on whether it appears to us that a regulatory change, either promulgating a new standard or amending one that already exists, would be crucial to controlling that condition. So we continue to do that. Where we think it is appropriate to draw up the criteria document, we have been doing so.

I think our output of criteria documents at the level of three to five relates to the fact that we are doing all of these internally now. The quality has substantially improved by doing them ourselves and in this way we are dealing with the highest priority issues.

Mr. GAYDOS. When is the last time you recommended a standard change, and what was it?

Dr. MILLAR. Well, we recommended four in 1984. Let me ask Dick Lemen to respond to that specifically. He is the person who draws up the recommended standards.

Mr. LEMEN. We made several policy statements. As Dr. Millar stated in his testimony, we have made some 55 since he became Director of the Institute.

Mr. GAYDOS. Fifty-five?

Mr. LEMEN. Fifty-five policy statements.

Mr. GAYDOS. What is a policy statement?

Mr. LEMEN. We define a policy statement as a response, either initiated by ourself or in response to DOL, such as being asked to respond to a rulemaking activity that they are working on.

Some examples, we have been very active in the area of ethlyene dibromide, a fumigant used for the fumigation of fruit against the Mediterranean fruit fly. We recommended to OSHA that there was a need for a standard. We have worked with OSHA in the area of asbestos. We have worked with the Mine Safety and Health Administration in the area of radon daughters and exposure of uranium miners.

Some of the latest criteria documents we have sent to OSHA include safety documents on precast concrete, oil and gas well drilling, lockout and tagout, grain explosions. We have just issued a document on paint manufacturing and a criteria document on styrene. Those are examples, and I would be certainly happy to supply those documents and statements if you wish.

Mr. GAYDOS. You probably share our frustration as a committee because, just to take one grain standard, we went down to Oswego, New Orleans, and over in Texas, and we had all of those fatalities.

That is 8 years ago or so. Still we're experiencing explosions—they're minor, of course. We'll have to wait for another catastrophe to occur. I guess you share our frustration.

Let me ask you while we're on that subject, how would you describe the relationship between NIOSH and OSHA right now? I know that not all of your recommendations have been adopted, as I have mentioned several times now. Is the working relationship improved? I know you don't want to criticize, but how are you doing? Is it working? Is it getting better, with more cooperation, or is it the status quo?

Dr. MILLAR. We have a lot of contact with OSHA, and it varies at various levels of our respective organizations. For instance, Mr. Lemen meets every month with the standards people in OSHA. He is aware of what their interests are, and they are aware of what our interests are. We think that has been quite an effective exchange. At the bench level in our laboratories and in our programs, there is almost daily contact with people at the working level in OSHA. So there is a lot of contact.

I get together periodically with the Assistant Secretary for OSHA and go over mutual concerns, and also with the Assistant Secretary for MSHA. Those meetings are not frequent, but they are periodic. For instance, I have, a meeting coming up with Mr. Zegeer at MSHA in August. So I would say our communication with them is very close. I don't think we have any situations where the right hand doesn't know what the left hand is doing.

Mr. GAYDOS. Would I be very naive if I asked whether or not you raised Cain with the fact that back in 1977 or 1978 you made a formal recommendation involving MIC, and nothing has been done, nobody is progressing any standards. We're in 1985, going into 1986. Sometimes when you're talking in these formal or informal meetings, do you ever raise Cain about it and ask questions——

Dr. MILLAR. On occasion I have written fairly pointed letters to previous administrators of OSHA about certain kinds of things. For instance, we have recently dealt with ethylene oxide in terms of a short-term exposure limit that we feel very strongly should be in place. OSHA does not share that opinion. There have been others similar to that.

I am basically a man who likes to be loved, so I don't call up and scream and yell. Generally I try to write a letter that convinces people on the basis of available facts without being too obstreperous about it. But I think you make a very good point. We certainly do exercise our prerogative to point out where we think something is not adequate.

Dick, could you respond to the specific question about MIC?

Mr. LEMEN. On the situation with MIC, Mr. Chairman, as you remember in my testimony in December before your committee——

Mr. GAYDOS. That's where I got it from. I couldn't quite place it. I apologize for not remembering.

Mr. LEMEN. We talked about two specific actions that relate to the situation. The first action was a labeling standard. We had issued a criteria document in 1975 recommending that employees be informed of what they were working with. Second, in 1977, we issued a criteria document on cyanide, and methyl isocyanide was included in that. We made those two recommendations.

We have subsequently made, as I reported in that same hearing, recommendations to OSHA in a joint guideline that was published in 1980, and also in a pocket guide to chemical hazards, which was also a joint OSHA/NIOSH publication. So we have made several recommendations.

To answer your question whether it is frustrating that these are not enacted as a standard, they do get a lot of other action that is very important. They inform the public. Our criteria documents have been accepted by both management and labor and are often used by management as their own internal standards when developing programs of occupational safety and health. So I don't think we feel a complete frustration that our work is for naught, because the documents do have a very important role and are used very frequently by the health and safety community.

Mr. GAYDOS. You probably share our frustration. We don't have an agricultural standard yet in some areas. We have one, but I think it's a limited one.

Could you make available to the committee—and before you answer, Doctor, you may want to think about it—without us sending you interrogatories, could you make available to us some of your documentation involving recommendations that you have made in the past, say covering the last 5 years?

Dr. MILLAR. We would be pleased to do that, sir.

Mr. GAYDOS. I imagine it's a matter of record somewhere anyhow. But I want to review them just personally, No. 1, for the purpose of determining your activity, and second, for the alternate purpose of determining what the response has been as far as action and whether we should be initiating additional study or things like that.

Dr. MILLAR. We can do that.

Mr. LEMEN. We can supply that to you very shortly.

[Information requested follows:]

See the following 12 pages.

NIOSH POLICY STATEMENTS TRANSMITTED TO DOL SINCE 1981
ALPHABETICAL LISTING

ACCESS TO MEDICAL RECORDS	09/14/82	Letter to Docket Office from Dr. Millar transmitting NIOSH comments on the proposed rule of Access to Employee Exposure and Medical Records [47 FR 30420-38].
	09/24/82	Letter to Mr. Tom Hall, Division of Consumer Affairs, DOL from Dr. Millar transmitting NIOSH testimony for hearing on proposed rule Access to Employee Exposure and Medical Records beginning 5 OCT 82.
ARSENIC	07/14/82	Date of testimony; could not find a transmittal letter. The reopening of the rulemaking record, comment period, and informal hearing was a result of OSHA being ordered by the Ninth Circuit Court of Appeals to receive additional evidence and make additional findings on the issues presented by Industrial Union Department v. American Petroleum Institute.
ASBESTOS	09/09/81	Review of OSHA Asbestos Risk Assessment. Do not have copy of letter transmitting it to OSHA.
	05/25/84	Letter to Mr. Thomas Hall, OSHA Division of Consumer Affairs from Richard Lemen; Director, DSDTT transmitting NIOSH testimony for hearing on proposed rule beginning 19 JUNE 84; this is also considered our Proposed Rule comments.
	08/24/84	Letter to Mr. Thomas Hall, OSHA Division of Consumer Affairs from Richard Lemen; Director, DSDTT transmitting proposed rule post-hearing material to the Docket file (H-033C).
BENZENE	04/15/83	Letter to Dr. Robert Beliles; Director, Office of Carcinogen Studies; OSHA from Richard Lemen; Director, DSDTT submitting field studies conducted by NIOSH in which environmental benzene concentrations were reported. This submission was to assist in the development of the proposed rule on benzene.

NIOSH POLICY STATEMENTS TRANSMITTED TO DOL SINCE 1981 - ALPHABETICAL LISTING

BENZENE (cont.)	04/26/84	Letter to Dr. Leonard Vance; Director, Health Standards Program; OSHA from Richard Lemen; Director, DSDTI submitting our review of the draft proposed rule on occupational exposure to benzene.
BENZIDINE CONGENER DYES	10/07/82	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting a prepublication copy of "Preventing Health Hazards from Exposure to Benzidine Congener Dyes."
BUTADIENE, 1,3-	02/14/84	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting a prepublication copy of NIOSH Current Intelligence Bulletin on 1,3-butadiene.
	03/05/84	Letter to Document Control Officer, EPA Office of Toxic Substances from Lawrence Mazzuckelli; Assistant to the Director, DSDTI for Document Development submitting prepublication copies of NIOSH Current Intelligence Bulletin #41 in response to OSHA/EPA request for information [FR, dtd 1/5/84].
CADMIUM	09/27/84	Date of printed document. Letter dated 12/03/84 to Mr. Robert Rowland; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting to OSHA a prepublication copy of NIOSH Current Intelligence Bulletin on Cadmium.
CARBON MONOXIDE	02/14/84	Date of printed mini-alert, Carbon Monoxide (CO) Hazard in Aircraft Refueling Operations. A transmittal letter was not done; it was given to OSHA during an OSHA/NIOSH monthly meeting.
CARCINOGEN POLICY	04/10/82	Memo to Docket Officer, OSHA from Dr. Millar transmitting NIOSH comments on the Advance Notice of Proposed Rulemaking [47 FR 187-190] on OSHA policy on "Identification, Classification and Regulation of Potential Occupational Carcinogens [29 CFR 1990].

NIOSH POLICY STATEMENTS TRANSMITTED TO DOL SINCE 1981 - ALPHABETICAL LISTING

COAL TAR PITCH VOLATILES	08/31/82	Letter to Docket Officer, OSHA from Dr. Millar submitting NIOSH comments on the Proposed Rule Coal Tar Pitch Volatiles (29 CFR 1910,1002), [47 FR 23482-4].
COBALT	11/10/81	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting a prepublication copy of NIOSH "Criteria for Controlling Occupational Exposure to Cobalt."
COMPRESSED AIR	07/12/85	Letter to Docket Officer, OSHA from Dr. Millar resubmitting NIOSH report "Criteria for Interim Decompression Tables for Caisson and Tunnel Workers" in response to a request for comments and information [50 FR 15750, 4/22/85] regarding proposed revision of 29 CFR 1926.803 (Compressed Air & Appendix to Subpart S (Decompression Tables).
CONCRETE	04/19/82	Letter to Docket Officer submitting NIOSH comments on OSHA's Advance Notice of Proposed Rulemaking on Concrete, Concrete Forms, and Shoring [47 FR 5910-5912].
	06/00/84	Date of printed criteria document "Comprehensive Safety Recommendations for the Precast Concrete Products Industry." This document was transmitted to DOL informally by DSR; it was never officially transmitted by Dr. Millar.
CONFINED SPACES	10/28/83	Letter to Mr. Theddeus Tomczak from J. K. Bainbridge; Deputy Director, DSDTT submitting NIOSH's technical review of the draft standard for tank, vessel and confined space entry. The draft was sent to NIOSH 8/1/83 by Mr. Barry White, Director of the Safety Standards Program, OSHA.
COTTON DUST	03/31/82	Memo to Docket Officer, OSHA from Dr. Millar; Director, NIOSH submitting NIOSH comments on the Advance Notice of Proposed Rulemaking on Cotton Dust [47 FR 5906-5910, 2/9/82].
	09/09/82	Letter to Docket Officer from Dr. Millar submitting supplemental comments to our 3/26/82 Advance Notice of Proposed Rulemaking comments: review of ATRI report "Medical Surveillance Data in the Cotton Textile Industry."

NIOSH POLICY STATEMENTS TRANSMITTED TO DOL SINCE 1981 - ALPHABETICAL LISTING

COTTON DUST (cont.)	10/01/82	Letter to the Docket Officer, OSHA from Dr. Millar submitting NIOSH comments on proposed reinforcement stay for knitting operations. The comments consisted solely of a review of the paper "Analysis of Pulmonary Functions Data of Knitting Industry Workers" by Drs. Boehlecke and Battigelli of Univ. of NC.
	01/03/83	Letter to Docket Officer, OSHA from Dr. Millar submitting four secondary non-textile industries reports as part of NIOSH Advance Notice of Proposed Rulemaking comments.
	08/09/83	Letter to Docket Officer, OSHA from Dr. Millar submitting NIOSH comments on the Proposed Rule on occupational exposure to cotton dust (docket no. H-052E).
	09/09/83	Letter to Mr. Tom Hall, OSHA Divison of Consumer Affairs from Dr. Millar submitting NIOSH testimony for hearing beginning on 19 SEPT 83.
	10/28/83	Letter to Mr. Tom Hall, OSHA Division of Consumer Affairs from Dr. Millar submitting supplemental information to the hearing record. The supplemental information was industrial hygiene data from the NIOSH study of the cottonseed oil mills.
	12/14/83	Letter to Mr. Tom Hall, Division of Consumer Affairs, OSHA from Richard Lemen; Director, DSDTI submitting NIOSH proposed rule post-hearing comments on two specific questions that OSHA requested us to respond to.
DEHP	01/05/83	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting prepublication copy of "Alternatives to Di-2-Ethylhexyl Phthalate (DEHP, 'DOP')".
DINITROTOLUENE	07/15/85	Letter to Patrick Tyson; Acting Assistant Secretary for Health; DOL from Dr. Millar transmitting to OSHA a prepublication copy of NIOSH Current Intelligence Bulletin #44, Dinitrotoluenes (DNT).

NIOSH POLICY STATEMENTS TRANSMITTED TO DOL SINCE 1981 - ALPHABETICAL LISTING

DIOXIN	01/25/84	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting a prepublication copy of NIOSH Current Intelligence Bulletin on 2,3,7,8- tetrachlorodibenzop-dioxin (TCDD, "dioxin").
DORMANT STANDARDS	10/23/84	Letter to Mr. Robert Rowland; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting NIOSH review of current information concerning a list of 117 agents for which OSHA had begun rulemaking process but had not completed (115 were chemical substances and 2 were processes or associated hazards).
ELECTROCUTION	03/08/85	Letter to Dr. Leonard Vance; Director, Health Standards Programs and Dr. Barry White; Director, Safety Standards Programs; OSHA submitting NIOSH Alert "Request for Assistance in Preventing Electrocutions of Workers in Fast Food Restaurants."
	07/30/85	Letter to Dr. Barry White; Director, Safety Standards Program; OSHA from Richard Lemen; Director, DSDTI transmitting a prepublication copy of NIOSH Alert "Preventing Electrocutions from Contact Between Cranes and Power Lines."
ETHYLENE DIBROMIDE	11/10/81	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting a prepublication copy of NIOSH Current Intelligence Bulletin #37, Ethylene Dibromide (EDB): Evidence of Carcinogenicity.
	01/07/82	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting NIOSH response to Advance Notice of Proposed Rulemaking. Our letter stated our position on an Emergency Temporary Standard.
	02/16/82	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting NIOSH review of "Recommended Procedures to Minimize Worker Exposure to Ethylene Dibromide from Fumigated Grain, Citrus, and Other Commodities." Stated in letter that the recommendations are deficient in protecting workers from EDB.

ETHYLENE DIBROMIDE (cont.)	09/09/82	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting a copy of a report done under contract by SRI International, "Quantitative Cancer Risk Assessment for Occupational Exposure to Ethylene Dibromide."
	11/21/83	Letter to Docket Officer, OSHA from Dr. Millar submitting NIOSH comments on the proposed revision to the present standard on ethylene dibromide (29 CFR 1910.1000, Table Z-2). 11/23/83 Submitted errata sheet to Proposed Rule comments.
	02/03/84	Letter to Mr. Thomas Hall, OSHA Division of Consumer Affairs from Richard Lemen; Director, DSDTT submitting NIOSH testimony for hearing on proposed rule which stated that our statement of position was already at the Docket. Actual testimony was later hand carried (the day of the testimony) and put in Docket file.
ETHYLENE OXIDE	05/22/81	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Ronald Coene; Acting Director, NIOSH submitting a prepublication copy of NIOSH Current Intelligence Bulletin, Ethylene Oxide (EtO): Evidence of Carcinogenicity.
	02/16/82	Letter to Mr. Robert Beliles; Director, Office of Carcinogen Standards; Health Standards Programs; OSHA from Richard Lemen; Director, DSDTT submitting NIOSH review of draft health effects section of proposed rule on ethylene oxide.
	04/02/82	Memo to Docket Officer, OSHA from Dr. Millar submitting NIOSH comments on the Advance Notice of Proposed Rulemaking on ethylene oxide (Docket H-200).
	06/22/83	Letter to Docket Officer, OSHA from Dr. Millar submitting NIOSH comments on the Proposed Rule occupational exposure to ethylene oxide [48 FR 17284, 4/21/83].
	07/20/83	Hand carried testimony to DOL on proposed rule to Docket Office to put into Docket file.

ETHYLENE OXIDE (cont.)	07/23/84	Letter to Mr. Patrick Tyson; Acting Assistant Secretary for Health; DOL from Dr. Harris; Deputy Director, NIOSH submitting NIOSH review of OMB's comments on OSHA's draft standard and the appropriateness of a STEL.
	03/19/85	Letter to Mr. Robert Rowland, Assistant Secretary for Occupational Safety and Health, DOL from Dr. Millar responding to Rowland's letter of 12/21/84 regarding funding a study proposed by Dr. Janet Yager to determine whether short-term high level exposures to EtO are more hazardous than an equivalent dose spread evenly over 8-hour workday.
	04/30/85	Letter to Docket Officer, OSHA from Dr. Millar submitting NIOSH comments on OSHA Proposed Rule, Occupational Exposure to EtO; Labeling Requirements, Docket No. H-200.
EXCAVATIONS	05/00/83	Date of printed criteria document "Development of Draft Construction Safety Standards for Excavations." This document was informally transmitted to DOL by DSR; it was never officially transmitted by Dr. Millar.
	07/30/85	Letter to Dr. Barry White; Director, Safety Standards Program; OSHA and Mr. Edward Baier; Director, Health Standards Program; OSHA transmitting a prepublication copy of NIOSH Alert "Preventing Deaths and Injuries from Excavation Cave-Ins."
FIELD SANITATION	06/10/83	Letter to Docket Officer, OSHA from Dr. Millar submitting NIOSH comments on the Advance Notice of Proposed Rulemaking for field sanitation. NIOSH resubmitted the document "A Report to the Occupational Safety and Health Administration on Field Sanitation."
	04/03/84	Letter to Docket Officer, OSHA from Dr. Millar submitting NIOSH comments on the Proposed Rule for field sanitation.
	04/26/84	Letter to Mr. Thomas Hall, OSHA Division of Consumer Affairs from Dr. Millar submitting our notice of our intent to appear at the public hearing and that NIOSH's public statement would briefly elaborate on the comments previously submitted on the proposed rule. Presented testimony 05/24/84 at hearing, May 23-24, 1984, in Washington, D.C. on proposed rule.

NIOSH POLICY STATEMENTS TRANSMITTED TO DOL SINCE 1981 - ALPHABETICAL LISTING

FOG STREAMS	07/30/85	Letter to Dr. Barry White; Director, Safety Standards Program; OSHA and Mr. Edward Baier; Acting Director, Health Standards Program; OSHA from Richard Lemen; Director, DSDTT transmitting a prepublication copy of NIOSH Alert "Use of Water Spray (Fog) Streams to Prevent or Control Ignition of Flammable Atmospheres."
FORMALDEHYDE	04/15/81	Date of printed NIOSH Current Intelligence Bulletin, Formaldehyde: Evidence of Carcinogenicity. Could not find a copy of transmittal letter to DOL.
	03/23/82	Letter to Mr. Thorne Auchter, Assistant Secretary for Occupational Safety and Health, DOL from Dr. Millar submitting additional information regarding the human carcinogenicity of formaldehyde. This information was contained in a copy of a manuscript which was submitted to the Journal of the American Medical Association. The manuscript described a recently evaluated case of squamous cell carcinoma of the nasal cavity in a male.
	03/20/82	5/3/82 letter from Mark Cowan, Deputy Assistant Secretary, OSHA to Dr. Millar confirming we submitted information regarding the carcinogenicity of formaldehyde on 3/20/82. The information had been sent to NIOSH by Dr. Lorenzo Tomatis, Director of the International Agency for Research on Cancer (IARC).
	08/03/82	Carbon copy of letter to Dr. Bruce Karrh of Du Pont from Philip Bierbaum; Acting Director, DSHEFS was sent to Peter Infante, OSHA, to which was enclosed a copy of NIOSH's review of the mortality study "Epidemiologic Study of Cancer Deaths in Du Pont Workers with Potential Exposure to Formaldehyde."
	12/04/84	Letter to Dr. Leonard Vance; Director, Health Standards Program; OSHA from Dr. Harris; Deputy Director, NIOSH submitting to OSHA our review of "Preliminary Assessment of the Health Effects of Formaldehyde" which was prepared by OSHA staff.
	02/25/85	Letter to the Docket Office, OSHA from Dr. Millar submitting NIOSH comments and the NIOSH Criteria Document and Current Intelligence Bulletin on formaldehyde in response to a request for information published in the Federal Register [50 FR 1547-1549, 1/11/85].

NIOSH POLICY STATEMENTS TRANSMITTED TO DOL SINCE 1981 - ALPHABETICAL LISTING

GLYCOL ETHERS	06/07/83	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting copy of NIOSH Current Intelligence Bulletin on Glycol Ethers.
GRAIN HANDLING FACILITIES	12/00/83	Date of printed criteria document "Occupational Safety in Grain Elevators and Feed Mills. This document was transmitted to OSHA by DSR informally; it never was transmitted officially from Dr. Millar.
	02/29/84	Letter to Docket Officer, OSHA from Dr. Millar submitting NIOSH comments on the Proposed Rule Grain Handling Facilities; Safety Hazards.
	06/12/84	Date of testimony to DOL on proposed rule; could not find a transmittal letter.
HAZARD COMMUNICATIONS	05/18/82	Letter to Docket Office, OSHA from Dr. Millar submitting NIOSH comments on the Proposed Rule on Hazard Communication [47 FR 12092-12124, 3/19/82].
	06/03/82	Letter to Mr. Tom Hall, Division of Consumer Affairs, OSHA from Richard Lemen; Director, DSDTT submitting an outline of NIOSH's testimony. Testimony was presented on June 15, 1982 in Washington, D.C.
	09/09/82	Letter to Docket Officer, OSHA from Dr. Millar submitting proposed rule post-hearing comments. The post-hearing comments were in response to requests made by DOL at the public hearing on June 15, 1982.
HAZARDOUS WASTE	11/17/82	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting a prepublication copy of "Hazardous Waste Sites and Hazardous Substance Emergencies." Date of final printed document is December 1982.
LEAD STD: QUANT. FIT TESTING	08/04/81	Letter to the OSHA Docket Office from Dr. Millar submitting NIOSH comments on the Proposed Rule Occupational Exposure to Lead; Quantitative Fit Test Provision (Docket No. H-049A) [3/19/81 FR].

LEAD STD: QUANT. FIT TESTING (cont.)	09/11/81	Letter to Mr. Tom Hall, OSHA Division of Consumer Affairs from Dr. Millar stating NIOSH would make no oral presentation at hearing but would appear to submit information into the record which would include the report "Di-2-Ethylhexyl Phthalate and Alternate Test Agents in Respirator Quantitative Fit Testing."
	10/07/81	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting NIOSH's post-hearing comments: "Requirements for Respirator Fit Testing in the OSHA Lead Standard."
	12/17/81	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting a short report containing an analysis of the data submitted to the record during the post-hearing comment period and includes an expansion of Tables 4, 5, and 6 of our 10/07/81 submission.
	09/16/82	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting letter requesting that comment period for reopening of Docket H-049A be extended [47 FR 36448, 8/20/82]. Also commented on the inadequacy of a fit factor screening criterion of 10 for half mask respirator programs.
	12/13/82	Letter to OSHA Docket Office from Dr. Millar submitting a supplemental report which amplified NIOSH Proposed Rule comments. The report was "Evaluation of Quantitative and Proposed Qualitative Screening Tests for Inadequate Fit Factors of Respirator Users" dated October 1982. [46 FR 27358 and 47 FR 36448]
LOCKOUT/TAGOUT	09/00/83	Date of printed document. Letter dated 3/12/84 to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting to DOL NIOSH's technical report "Guidelines for Controlling Hazardous Energy During Maintenance and Servicing."
METHODS OF COMPLIANCE	06/21/83	Letter to OSHA Docket Officer from Dr. Millar submitting NIOSH comments on the Advance Notice of Proposed Rulemaking on Methods of Compliance (Docket No. H-160).

NIOSH POLICY STATEMENTS TRANSMITTED TO DOL SINCE 1981 - ALPHABETICAL LISTING

MINING - AIR CONTAMINANTS	12/01/82	Letter to Office of Standards, Regulations and Variances, MSHA from Dr. Millar submitting NIOSH comments on the Underground Coal Mine Safety Standards (30 CFR Part 75).
	01/26/83	Letter to Office of Standards, Regulations and Variances; MSHA from Dr. Millar submitting NIOSH comments on the Metal and Nonmetal Mining Safety Standards (30 CFR Parts 55 and 57).
MONOHALOMETHANES	09/27/84	Date of printed document. Letter dated 12/03/84 to Robert Rowland, Assistant Secretary for Occupational Safety and Health, DOL from Dr. Millar submitting a prepublication copy of NIOSH Current Intelligence Bulletin on Monohalomethanes.
OIL & GAS WELL DRILLING	12/00/83	Date of printed criteria document "Comprehensive Safety Recommendations for Land-Based Oil and Gas Well Drilling" is 09/00/83. This document was transmitted to OSHA informally by DSR; it was never officially transmitted by Dr. Millar.
	02/29/84	Letter to Docket Officer, OSHA from Dr. Millar submitting NIOSH comments on the Proposed Rule on Oil and Gas Well Drilling and Servicing.
	06/22/84	Letter to Mr. Thomas Hall, OSHA Division of Consumer Affairs from Richard Lemen; Director, DSDTT submitting the document "Comprehensive Safety Recommendations for Land-Based Oil and Gas Well Drilling" which represented NIOSH testimony for hearing on proposed rule beginning on July 24, 1984.
OIL & GAS WELL DRILLING	10/10/84	Letter to Mr. Thomas Hall, OSHA from Richard Lemen; Director, DSDTT submitting post-hearing information to the Docket file.
PAINT & ALLIED COATING PRODUCTS	09/00/84	Date of printed document. Letter dated 12/13/84 to Mr. Robert Rowland, Assistant Secretary for Occupational Safety and Health, DOL from Dr. Millar submitting a prepublication copy of NIOSH "Recommendations for Control of Occupational Safety and Health Hazards....Manufacture of Paint and Allied Coating Products."

NIOSH POLICY STATEMENTS TRANSMITTED TO DOL SINCE 1981 - ALPHABETICAL LISTING

PRESENCE SENSING DEVICES	06/27/85	Letter to Docket Officer, OSHA from Dr. Millar transmitting NIOSH's comments on the Proposed Rule on Presence Sensing Device Initiation of Mechanical Power Presses [Docket No. S-225].
RADON DAUGHTERS	05/31/85	Letter to Ms. Patricia Silvey; Director, Office of Standards, Regulations, and Variances; MSHA from Dr. Millar submitting NIOSH comments on Advance Notice of Proposed Rulemaking Metal and Nonmetal Mine Safety and Health, Radiation Standards [50 FR 4143].
RESIDENTIAL WASTE COLLECTION	05/06/82	Letter to Mr. Thorne Auchter, Assistant Secretary for Occupational Safety and Health, DOL from Dr. Millar submitting a prepublication copy of NIOSH report "Residential Waste Collection: Hazard Recognition and Prevention."
ROBOTICS	03/08/85	Letter to Dr. Leonard Vance; Director, Health Standards Program; OSHA and Dr. Barry White; Director, Safety Standards Program; OSHA submitting NIOSH Alert "Request for Assistance in Preventing the Injury of Workers by Robots."
SILICA FLOUR	06/30/81	Date of Current Intelligence Bulletin on Silica Flour; could not find a transmittal letter.
STYRENE	09/00/83	Date of printed document. Letter dated 11/07/83 to Mr. Thorne Auchter, Assistant Secretary for Occupational Safety and Health, DOL from Dr. Millar submitting a prepublication copy of NIOSH "Criteria for a Recommended Standard....Occupational Exposure to Styrene."
UNDERGROUND CONSTRUCTION	10/04/83	Letter to Docket Officer, OSHA from Dr. Millar submitting NIOSH comments on the Proposed Rule for Underground Construction [48 FR 35774, 8/5/83].
VIBRATION SYNDROME	04/21/83	Letter to Mr. Thorne Auchter; Assistant Secretary for Occupational Safety and Health; DOL from Dr. Millar submitting copy of NIOSH Current Intelligence Bulletin, Vibration Syndrome.

Mr. GAYDOS. There has been a question raised about NIOSH's emphasis on health as opposed to safety issues, which we have talked about, particularly when we talk about the number of deaths and injuries and how they are related to safety issues.

Is this an issue which has been raised internally, or do we have any problem with it outside of what you have outlined very informatively today, your actions as far as your difficulties that you have with diseases as distinguished from accidents? Is there anything else you want to add on that subject matter?

Dr. MILLAR. Yes, sir. I would like to add that I think we are not investing in injury control nearly as much as we would like to. I think there is a tremendous amount to be gained by greater investment in injury control in the workplace.

First of all, just the sheer human misery that is implicit and explicit in those figures on the number killed and wounded every year I think makes it a very compelling problem. Traditionally over the years NIOSH has preoccupied itself principally with health as opposed to injury and safety issues. We are trying to change that. We have, in fact, received some additional resources in the past couple of years to do that. I think we are making some excellent moves toward that. But in the long run, I think there must clearly be a heavier investment in injury epidemiology and injury control.

However, I don't think we can ever expect to have a true dollar-for-dollar equity investment in health and in injury, because the two problems are quite different, as you have already said. Injury is an acute thing. We can measure the circumstances in which it occurred very quickly and very directly. We can say specifically some things that happened or some that didn't.

We are rarely given that opportunity in dealing with disease. We don't know what the exposure was really like. Sometimes we don't even know how many years the person was exposed to a particular hazard. A lot of our work is done late and after the fact, so it must be done in more sophisticated epidemiologic studies and, generally speaking, those cost more. So I don't think we will ever really be looking to a point where we have a true equity.

But I do think we need to invest more in injury control. I really feel very strongly about that. I think it is an area that has not been explored by anybody adequately.

Mr. GAYDOS. What about those that advocate safety research should be transferred to OSHA and that you should pursue the disease control? That's assuming that OSHA is able and willing to handle it, I imagine. Is that a naive proposition?

Dr. MILLAR. It may be based on some logic that I don't understand. My own view is that to understand what goes on with an injury involves the same kind of science that it takes to understand what goes on with a disease—principally, epidemiology, physics, things of that nature, mechanics, engineering. We have those skills. I think we have shown in the past two years, as Mr. Moran has gotten his teams out in the field looking at these problems, that we can provide information not previously discerned about these problems. Through the application of epidemiology, we can understand how to prevent them.

So I would think it would be most inappropriate to transfer injury epidemiology out of NIOSH just at the moment when we're beginning to make a serious and meaningful contribution to this problem.

Mr. GAYDOS. In other words, you're saying that your FACE program is meaningful and effectively being offered?

Dr. MILLAR. It has been brilliantly successful, in my judgment. I think we have shown, in less than a hundred investigations, that the science of epidemiology is applicable to injury just as it is to health. If we go out there and look, do an epidemiologic investigation, and concern ourselves with all of the circumstances, we will find things that enable prevention. It has certainly been true up to now.

John, would you care to add to that?

Mr. MORAN. I think you have covered it well.

Dr. MILLAR. Oh, yes. Tell them about South Carolina, the 20,000 distributions to the fast food people. I think that's wonderful.

Mr. MORAN. The FACE program you referred to is, of course, a field fatality investigation activity involving rather extensive interviews with coworkers, next-of-kin, employers, medical examiners, et cetera. There are two components to that program. One is developing an epidemiologic basis to determine why some workers may suffer a fatality and others are not injured at all.

But the other component that has developed in the last couple of years is in areas where we find specific problems that may not be widely recognized and for which, if that information were provided to a large community, there may be an immediate direct effect in reducing that hazard.

One study we did involved the death of an 18-year-old-young man who was electrocuted in a fast food restaurant, simply because of inappropriate electrical systems. He was electrocuted on a single-phase, 110 volt current, the same as we have in our homes. We issued a safety alert that was distributed fairly widely. But the Director of Health in the State of South Carolina reprinted that document and shipped it to over 20,000 business establishments in the State, any establishment where a food license was required by an employee.

I have gotten a number of letters from restaurant owners in the State, even some written on postcards, expressing appreciation for that.

Mr. GAYDOS. That is very encouraging, because most of the time you get complaints. So if there is an affirmative aspect to the action, I am very happy that the American people are now starting to respond, at least verbally and in writing. That's very good to hear.

As I understand it, Doctor, NIOSH is engaged in testing and certifying personal mine safety equipment. Do the manufacturers of this equipment pay for the testing, and if they do, how and what portion, things like that? Why is NIOSH testing the equipment instead of just hoping to get standards set and have the manufacturers test their own equipment in their own way? Would you comment on that?

Dr. MILLAR. Yes, sir. We have been testing and certifying respirators for a long time now, in collaboration with MSHA as our sister agency——

Mr. GAYDOS. Are we still using that German respirator, or do we have one developed in this country?

Dr. MILLAR. John?

Mr. GAYDOS. West Germany, I think, is the manufacturer.

Mr. MORAN. We have United States and West German manufacturers.

Mr. GAYDOS. All right.

Dr. MILLAR. We do charge fees for testing and certifying, although these were set some years ago and are considered a bit out of date. We test and certify under a set of Federal regulations, 30 CFR 11, which is admittedly out of date. We have been trying for some years now to revise and update those regulations to make them current, so that we can do the job better and get in a position where the testing would actually predict performance in the field much better than it does now. Quite frankly, the kind of tests we do under the present regs are not very good predictors of how the respirator is going to function in the field.

So we have been working with MSHA toward a revision of those regulations. We consider it a very important activity. We want to consummate that revision. There are a number of options being considered on how to proceed in the future: should the private sector have a more prominant role in the testing; should we get more into the mode of the Food and Drug Administration and require the submission of data we could look at and decide whether further testing is needed.

Dr. Harris has been very interested in this rewrite and is supervising it, and Mr. Moran has been very intimately involved in it. It is an ongoing, fairly long-term effort, but it is a very important one. I would like Dr. Harris to comment on that, if you have anything you would like to say about it, Elliott.

Dr. HARRIS. There is not really very much to say about it, other than the principal thing we are concerned with in this whole revision is that the worker get the maximum protection possible. This involves not only the laboratory testing for certification but we feel that perhaps field studies and field evaluations of these in the workplace would be appropriate. It is towards this end that we are driving.

Mr. GAYDOS. Doctor, I have no further questions.

I want to thank you again for coming before us. I do want to commend you on the record—it wasn't you directly, but CDC was there when we had our giardiasis problem up in Pennsylvania, in the central and western part. I guess indirectly you would be involved because you have employees drinking water on the job which is infected with giardiasis. So I want to commend the CDC and you people, too, for the almost immediate response. It is like government should work, in my estimation. I thought it was so proper and so refreshing.

So I want to thank you for coming here. We will probably have you back again. I didn't want to keep you so long but we had to establish a record. We talked about some electrifying things. We are a nation that has only had an Occupational Safety and Health

Act for roughly 15 years or so, and maybe we're in our infancy as far as what we're doing in the field. But it is dedicated professionals such as yourself that I think are going to make this Act work long after I'm gone. So I want to thank you very sincerely for your testimony.

I want to commend you for an outstanding professional staff and one that responds I think most directly.

Dr. MILLAR. Thank you for the opportunity.

Mr. GAYDOS. The committee will stand in recess until Wednesday, July 31, when we will hold a hearing on worker health and safety in operating nuclear power plants, at 9:30, in this room.

Doctor, for the record, I want to thank you and the staff of NIOSH for your assistance in providing us this exclusive overview of your activities. I am sure as we explore other issues at future hearings, you and your staff will again be willing to help us and appear here before the committee.

[Whereupon, at 11:15 a.m., the subcommittee was recessed.]

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